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RE-EXAMINING THE SUBCULTURE OF VIOLENCE IN THE SOUTH

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

in

The Department of Sociology

By  
Timothy Curt Hayes  
B.A., Mississippi State University, 1999  
M.S., Mississippi State University, 2003  
August, 2006

## **ACKNOWLEDGMENTS**

There are many people that I would like to take the opportunity to thank for their help in completing this project. I would first like to thank my committee chair, Dr. Matthew Lee, who has served as my mentor throughout my graduate career. His guidance and critiques have helped shape this dissertation beyond what I first thought possible. Secondly, the members of my committee; Dr. Bill Bankston, Dr. Edward Shihadeh, and Dr. Sung Joon Jang, deserve much appreciation as their comments were also extremely helpful.

Finally, my family deserves credit for all their support. My wife, Darcy Hayes, has provided much support and motivation throughout my graduate studies. I truly could not have completed this dissertation without her. Thanks and gratitude are also due to my mother and father, Ricky and Irene Hayes, and my brother, Patrick Hayes, for their unending support as I continued my studies beyond what anyone first expected.

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## **ABSTRACT**

The Southern region of the United States historically has a high rate of violent crime, especially homicide. This has led to a number of studies tackling the issue by relying on subcultural theory or by using structural correlates of crime to account for the South versus non-South difference in homicide. Macro level research has focused on pitting culture (usually measured by a dummy variable for South) against structural characteristics such as poverty and measures of income inequality, but suffers from a lack of direct cultural measures needed to successfully evaluate the subcultural thesis. Micro level research tends to focus on the attitudes of Southerners and finds that they tend to hold a heightened approval of violence in specific situations. However, micro level studies suffer from similar critiques as they tend to neglect structural explanations and are unable to evaluate whether these attitudes have any effect on violent crime.

This dissertation proposes a solution to the problems plaguing previous research by aggregating survey data on attitudes toward violence from the General Social Survey (GSS) to the Primary Sampling Unit (PSU) level of analysis and using them to predict actual rates of violence. Results from this analysis indicate that a measure of Extreme Violent attitudes is positively and significantly related to measures of homicide derived from the Uniform Crime Reporting Program's Supplementary Homicide Reports. This relationship remains in a multivariate model with several control variables used in previous studies on homicide and on the Southern subculture of violence. This would indicate that areas with cultural values approving of violence in a broad range of situations also have higher levels of homicide offending. However, these findings do not support an exclusively Southern subculture of violence, since it is not clear from these

data what accounts for the regional differences in homicide. Nevertheless, this study provides a level of evidence for the existence of a subculture of violence not previously achieved in the earlier work in this area. Limitations of this study and several relevant directions for future research are also discussed in the concluding chapter.

## **CHAPTER 1: INTRODUCTION AND STATEMENT OF THE PROBLEM**

The Southern region of the United States has been known for having a high rate of violent crime, especially homicide. For 2003, the South had a violent crime rate of 549.3 per 100,000 inhabitants, the highest of the four major Census Divisions, and accounts for about 41.6 percent of the nation's violent crime, according to the Federal Bureau of Investigation (FBI). When looking at the four separate offenses contained in the violent crime statistics for 2003, it is revealed that the South has the highest rate of homicide, aggravated assault and robbery, and the third highest rate of forcible rape (FBI 2003).

With regards to homicide, the South is consistently higher than the rest of the United States. In fact, from 1976 to 2003 the Uniform Crime Reporting Program's Supplementary Homicide Reports reveal that the South routinely has homicide rates 1.2 to 1.5 times higher than the rate for the total population. In 2003, the homicide rate for the United States, as reported in the FBI's Uniform Crime Reports (UCR), was 5.7 per 100,000 inhabitants. The rate for the South was reported as 6.9 per 100,000 inhabitants, which is 21% higher than the rate for the United States. An examination of the trends in homicide rates over the past 29 years reveals that the South has consistently had higher rates of homicide when compared to the other major Census Divisions (see Figure 1) and the rate for the United States (see Figure 2).

Several theoretical perspectives point to some possible explanations for such a high rate of violent crime, the predominant explanation being that the South may contain some type of subculture that calls for the use of violence in specific, culturally-defined situations that do not necessarily call for a violent reaction either outside of the South or



from non-Southerners (see Gastil 1971; Hackney 1969; Nisbett and Cohen 1996; and Reed 1971 and 1982). Alternative evidence does exist, however, that structural factors prevalent in the South may also be the answer (i.e., high levels of poverty, inequality and other measures of structural disadvantage tend to explain the difference between the South and the rest of the United States, see Blau and Blau 1982 as well as Loftin and Hill 1974). Despite decades of research since Gastil (1971) and Hackney (1969), two of the first to provide evidence for a Southern subculture, a consensus has not been reached and the “debate” between structure and culture continues.<sup>1</sup>

One of the main reasons these competing explanations have been so often pitted against each other is due to the differences in their argument, as well as their variables of interest. Structural theories tend to focus on normative control, where there is a consensus on what is and is not deviant or criminal behavior. Certain factors may lead to a weakening of these norms, such as strains produced by the presence of concentrated disadvantage (i.e., poverty, unemployment, educational inequality), but this does not affect the validity of the norms themselves, just the strength of their effect on behavior. Thus, the key variables for structural theories are usually the sources of strain or disorganization (again, poverty, unemployment, etc.) (Kornhauser 1978).

In cultural theories, the focus is on differing values. Here, there is no underlying consensus on normal and deviant behavior. Instead, there may be situations that lead a specific group to formulate values supportive of behavior that others outside that group may see as deviant. However, within the subculture, these values call forth what would

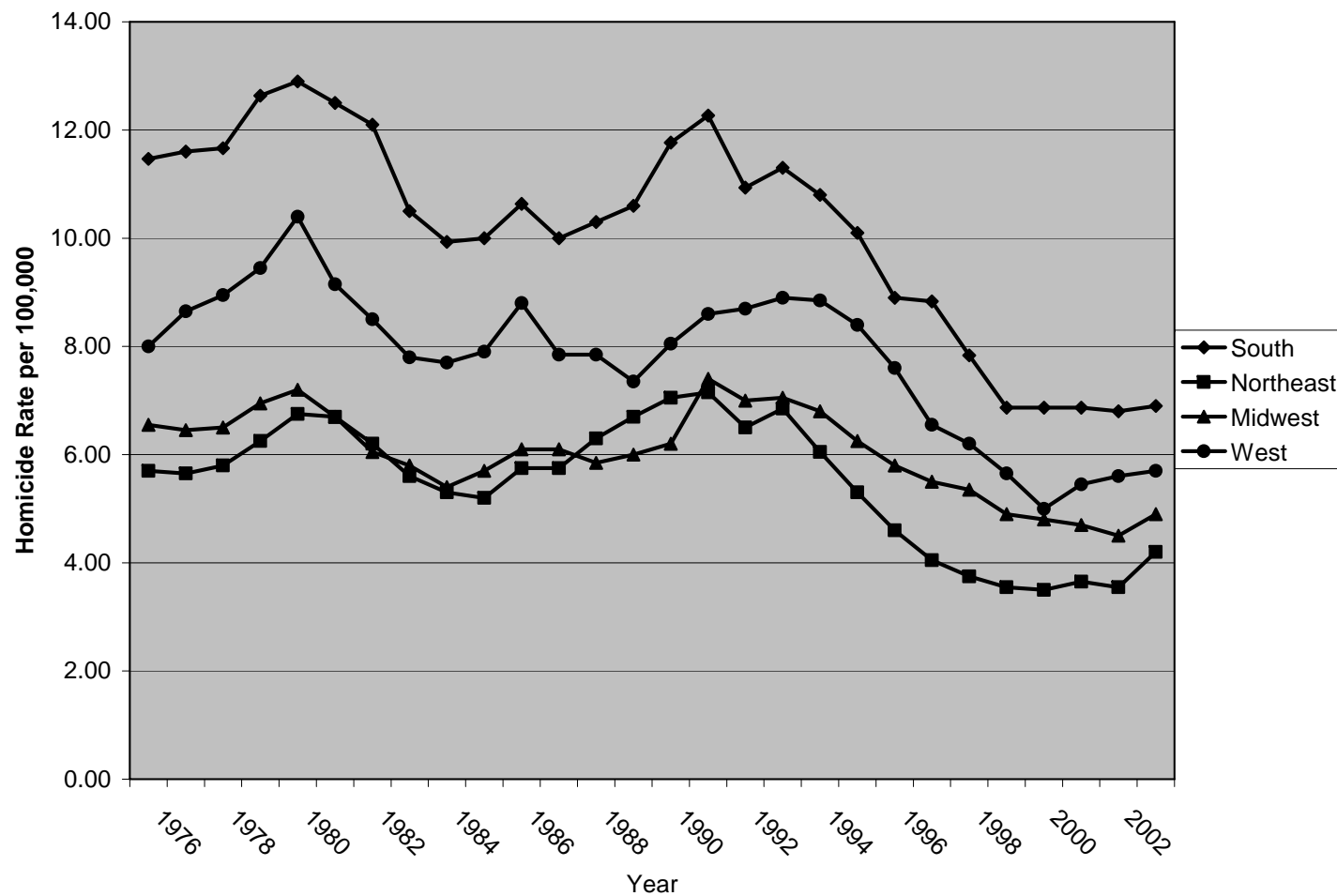
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<sup>1</sup> There has been some argument that the West may also have some type of subculture of violence, especially since the West closely follows the South in terms of violent crime (see Parker and Pruitt 2000). However, this may simply be an artifact of Southerners migrating to areas of the Southwest, as Gastil (1975) suggests.

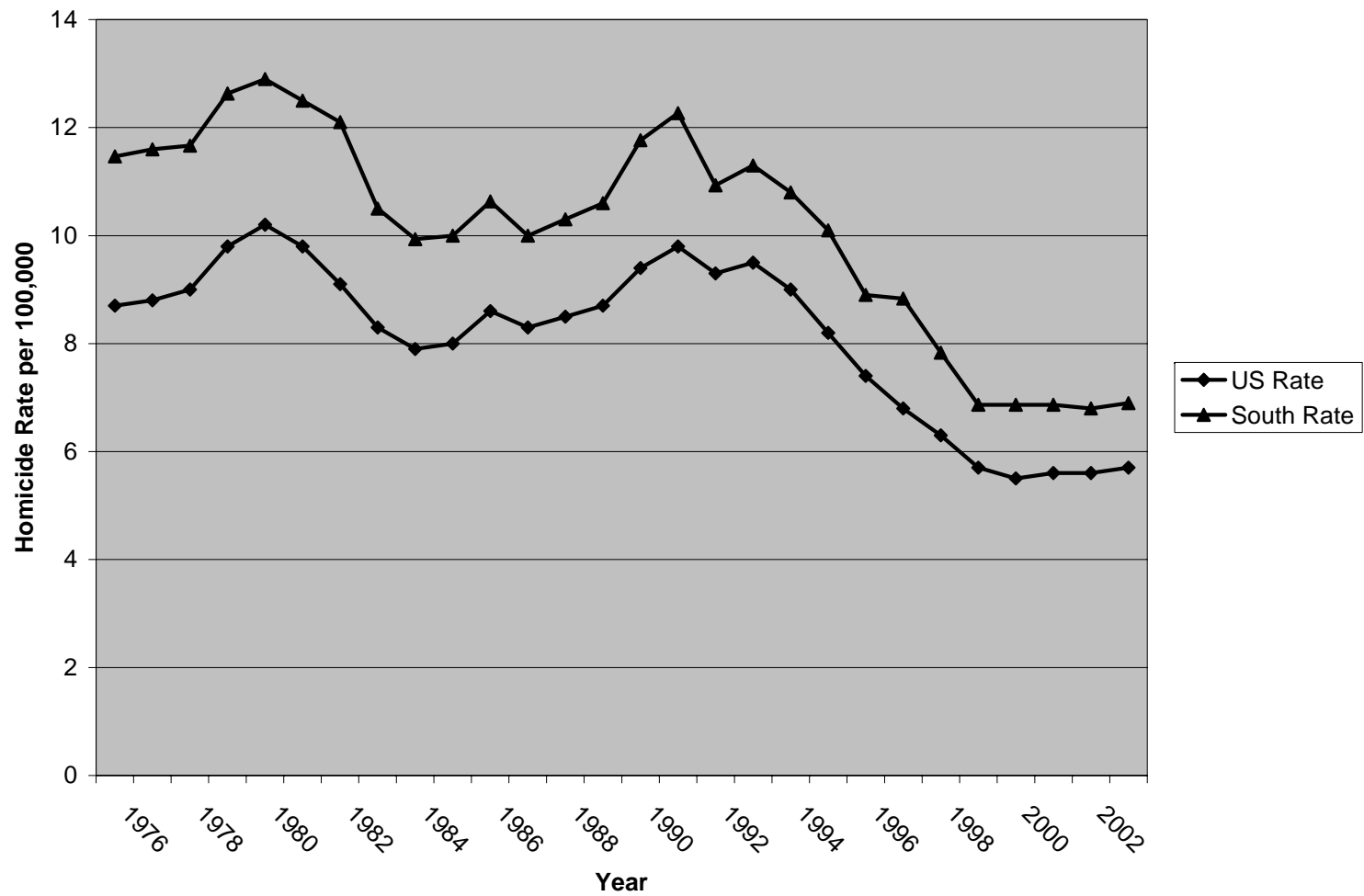
be seen as normal behavior in certain situations, and there are penalties in place for not acting in the expected way (Kornhauser 1978). Usually the failure to act in a way that is congruent with the subcultural value system leads to an individual being ostracized (see Wolfgang and Ferracuti 1967). Thus, with subcultural theories the variables of interest would be indicators of the cultural values and attitudes that make the subculture unique, or at the very least, different.

Literature on the Southern subculture of violence tends to treat culture and structure as two separate sets of variables or concepts, which again are often in competition. However, this reasoning may point to a false dichotomy with structure and culture on opposite sides. As an alternative, structure and culture can be conceptualized as two separate concepts, independently contributing to violent crime. Research and theorizing on crime in inner city neighborhoods suggests the possibility of such processes (see Wilson 1987; Anderson 1999) and there is no reason to expect a similar process would not be occurring in the South, even though it may be different in context.

Writings on Southern culture and history indicate that the South has been a region characterized by violence above and beyond that of the rest of the country from as early as its first settlement. Writers such as Wilbur Cash (1941) and Bertram Wyatt-Brown (1982 & 1986) discuss the use of honor among Southerners and the violence that sometimes accompanies it. This led sociologists such as Raymond Gastil (1971) and Sheldon Hackney (1969) to examine the issue closer, resulting in two landmark studies of Southern violence. Both studies provided evidence that structural circumstances could not explain the difference in Southern and non-Southern homicide. But, further studies in the same framework provided conflicting evidence with some finding that structural



**Figure 1. Trends in the Total Homicide Rate by Region**



**Figure 2. Difference in Southern and Total U.S. Rate of Homicide**

variables (poverty, inequality, educational attainment, etc) accounted for the disparate homicide rates between the South and other regions (see Loftin and Hill 1974; Blau and Blau 1982) while other studies insist that structure does not explain away the effect of a Southern dummy variable or other measures of South in a model predicting homicide (Messner 1983a; Blau and Golden 1986).

Another important issue in this line of work draws attention to the dependent variable used. Some argue that a rate of total homicide is too general for addressing issues regarding a Southern subculture of violence. Instead, a measure more specific to the theory surrounding the Southern subculture is proposed in several studies. Some studies here highlight homicide between intimates, or primary homicide as important (Smith and Parker 1980; Bankston, St. Pierre, and Allen 1985). Others choose to focus on argument based homicide as important since many theoretical discussions highlight the subculture coming forth in the context of an interpersonal dispute (Rice and Goldman 1994). Others still have used race disaggregated data on homicide, focusing on white offenders (Lee, Hayes and Thomas 2006), or comparing white-specific rates to that of other racial groups (Allen, McSeveney, and Bankston 1981; Huff-Corzine, Corzine and Moore 1986), citing that theory suggests the subculture would be rooted more among whites (see Nisbett and Cohen 1996).

Several noteworthy studies of Southern attitudes have followed the above macro level works, attempting to pin down the specific elements of the Southern culture that contribute to its higher rates of violent crime. These studies largely draw on public opinion-type surveys on various attitudes and behaviors that may indicate the presence of a subculture of violence among Southerners (see Dixon and Lizotte 1987; Ellison 1991;

Hayes and Lee 2005). The findings here indicate that residents of the South generally have higher than average support for violence, indicating a heightened approval of an adult male punching a stranger in specific situations.

While the research from both frameworks cited above is compelling, there is need for improvement. Several questions remain unanswered in the macro level studies, for example. The main deficiency here is the obvious lack of direct cultural indicators, mostly because these indicators are not present in macro level data. The absence of these indicators forces researchers to conclude that the unexplained residual is culture, and hopefully nothing else. This deficiency also hinders the ability to test the assumption that culture and structure may be acting independently of each other in influencing rates of violence.

Similarly, the research on micro level attitudes relies on questionably reliable measures of structure. Several researchers, including Ellison (1991), who have used individual level data to conduct research on cultural indicators of approval of violence, have argued that more precise controls for structure are needed as well as measures of social behavior related to cultural attitudes, and that they are simply not present in individual level datasets, such as the General Social Survey (GSS).

Perhaps, then, the best strategy is to combine the realms of macro and micro, by drawing from our best indicators of structural characteristics, such as the United States Census, and our best-to-date indicators of cultural attitudes, from surveys such as the GSS to follow the lead of several recent studies that aggregate survey data to a macro level unit of analysis (see Baumer, Messner, and Rosenfeld 2003; Rosenfeld, Messner and Baumer 2001; Taylor 1998). In brief, I propose using the Primary Sampling Unit

codes from the General Social Survey to 1) create aggregate indicators of the cultural attitude measures used by Dixon and Lizotte (1987), and Ellison (1991); 2) examine the link between cultural measures and the homicide by specifying models that predict rates of homicide with aggregate cultural indicators from the General Social Survey, 3) allow for the introduction of more valid control measures of structure, such as poverty and inequality, that are lacking in the tests focusing on the cultural framework of the South and its residents, 4) allow for an evaluation of the independent effects of structure and culture without the assumption that it is either culture or structure, and 5) examine the regional variation in the effects of these aggregated cultural indicators to determine if the effect of the South is accounted for by attitudinal indicators of culture.

In addition to the above strategy, it may also be important to follow the lead of some researchers and focus on measures of homicide that capture the idea of a Southern subculture. Instead of relying on the rate of total homicide to test a theory that some argue applies to a specific group of people under specific circumstances, it may be necessary to disaggregate homicide data by circumstance and by race, producing rates of total homicide as well as felony-based and argument-based homicides. Likewise, rates of white offender homicide, white felony homicide and white argument homicide will be produced. This would provide a better measure of the types of violence suggested as most important by subcultural arguments dealing with the South.

To further articulate this approach, the remainder of this dissertation will proceed as follows. Chapter 2 provides a detailed literature review covering both the macro and micro level studies dealing with the subculture of violence in the South as well as a brief discussion of the structural counterargument to this theory. This chapter concludes with a

discussion of the limitations of past research and a several meaningful hypotheses drawn from this research. Chapter 3 provides a description of the datasets chosen to accomplish the test of hypotheses implied in the previous chapter as well as the analytical method chosen to test these hypotheses. Chapter 3 also contains a basic description of the variables drawn from these datasets, including frequency distributions and some statistical tests for differences between the South and non-South on these variables. Chapter 4 includes the results from the analysis of bivariate correlations and the multivariate models in tabular format, including relevant diagnostic procedures. Finally Chapter 5 includes a thorough discussion of these results and how they relate to the stated hypotheses and the past theoretical arguments. Chapter 5 concludes with a discussion of the limitations of this study as well as several noted directions for future lines of research on the Southern subculture.



## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Theoretical Explanations of Southern Violence**

The idea of a subculture of violence in the South primarily surfaces in historical narratives and descriptions of the American South and its residents both before and after the Civil War. Writers such as Dickson Bruce (1979), Wilbur Cash (1941) and Bertram Wyatt-Brown (1982 & 1986) characterize the South as a violent region from the times of first settlement. The first settlers of the South were a mix of criminal indentured servants from the British Isles and, later, mostly Scotch-Irish and a few English immigrants (see McWhiney 1988; Wyatt-Brown 1982; 1986; Gastil 1975). These immigrants were met with a scarcely populated land with no infrastructure and very little in the way of state mechanisms in place geared toward the protection of its residents or their property. While sometimes characterized as highly mobile (see Gastil 1975), those who did settle the South often supported themselves by engaging in animal herding and/or farming, both of which are, to a greater or lesser degree, susceptible to theft and loss.

In the absence of a significant presence of formal authorities, which we can see as accompanying the frontier-like nature of the South as it was initially settled, the settlers were forced to become self-protective. To protect themselves from would-be thieves, the Southern settlers had to adapt a veneer of “toughness” in order to broadcast that they were not to be trifled with. This developed into what some refer to as a “culture of honor,” in which any insult or threat to family, property or person would meet a quick and violent response (Nisbett and Cohen 1996).

The discussion of honor in the South and its connection to violence is not limited to the “culture of honor.” Bertram Wyatt-Brown (1986) calls attention to honor among

Southerners and its relation to the use of violence in the South as well as its role in evaluating conduct. In commenting on behavioral codes and their evaluation in the South, Wyatt-Brown calls attention to several important factors:

“(1) honor as immortalizing valor, particularly in the character of revenge against familial and community enemies; (2) opinion of others as an indispensable part of personal identity and gauge of self-worth; (3) physical appearance and ferocity of will as signs of inner merit; and (4) defense of male integrity and mingled fear and love of woman” (Wyatt-Brown, 1986; p.27).

It is important to note that in these characteristics used to evaluate behavior in the South, Wyatt-Brown hints at how violence plays a significant role. First, he calls attention to vengeance against enemies and its connection to violence. And secondly, Wyatt-Brown mentions “ferocity of will,” indicating that a willingness to do whatever is necessary, even if it means engaging in violence, is important in judging the behavior, or the character, of a fellow Southerner. So, the term honor as defined here has more to do with the willingness to use violence when it is expected than the more traditional definition of bravery or moral character.<sup>2</sup>

In returning to the discussion of the culture of honor, it is important to remember that it primarily calls for violence in instances of personal threats or insults to an individual. Within the culture of honor, a violent response is regarded as an acceptable mode of defense in the face of an insult since they are viewed as tests of a person’s willingness to act. If a particular head of the household was viewed as unable to protect his possessions and family, he was viewed as more susceptible to attack from thieves and criminals. Therefore, when threatened, these males were usually quick to resort to

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<sup>2</sup> It is also necessary to state that further discussions of honor will be in reference to the Wyatt-Brown (1986) definition.

violence as proof that they were capable of defending themselves. Nisbett and Cohen suggest that:

“To maintain credible power of deterrence, the individual must project a stance of willingness to commit mayhem and to risk wounds or death for himself. Thus he must constantly be on guard against affronts that could be construed by others as disrespect. When someone allows himself to be insulted, he risks giving the impression that he lacks the strength to protect what is his. Thus the individual must respond with violence or the threat of violence to any affront” (Nisbett and Cohen 1996: p. xv).

This “culture of honor” was employed by the first settlers of the South and in turn passed to future generations through the socialization process (Nisbett and Cohen 1996; see also Hackney 1969). Hence, according to this argument, the high levels of violence observed in the South in contemporary times are a relic of cultural adaptations to a more rugged era, which have survived an intergenerational process of transmission. Put another way, the unique social-ecological conditions of the South, combined with the types of people who first settled there and how they made their livings, contributed to the creation of a culture that supports violent reactions to threatening behavior (Wyatt-Brown 1982; Chu, Rivera and Loftin 2000).

## **2.2 Further Evidence of Violence in Southern Culture**

In addition to the descriptions of the South and its possession of an honor code legitimizing violence, there are also ample discussions of ancillary elements of Southern culture that tend to reflect the presence of such a code. For example, John Shelton Reed (1982) states that we would not expect Southern cultural views on violence to remain situated around the practice of an honor code. Instead he says we find evidence of use of violence as a cultural tradition of violence in several elements of Southern culture, such as popular music originating in the South.

In an essay describing violent themes in country music, Reed (1993) calls attention to two themes. First, there is a definite theme involving the classic lover's quarrel where the protagonist of a particular song seeks violent revenge on a cheating spouse. Putting aside the obvious gender issues coming from the fact that this protagonist, until very recently, is almost always male, we can still apply such a situation to the code of honor described by W. Cash (1941), Wyatt-Brown (1982; 1986) and Nisbett and Cohen (1996), among others. Reed (1993) discusses several examples of this scenario appearing in popular country music. One appears in a song titled "Cedartown, Georgia" as sung by Waylon Jennings. The lyrics describe a male narrator's marriage to a girl from Cedartown and their relocation to the French Quarter in New Orleans. However, the girl from Cedartown later has the opportunity to become unfaithful when her husband begins to spend more and more time away from home working. The narrator soon discovers the infidelity when, on his way home from work one morning he sees his wife with another man. The lyrics finish the story:

"As she walked right by me  
And she looked right through me.  
I made up my mind what I'm a gonna do  
Eased in the pawnshop and bought a 22.  
I watched as the roomclerk gave them a room key  
A standin' right outside I could read Room 23.  
Tonight I'll put her on a train for Georgia  
Gonna be a lotta kin folks squallin' and a grieving  
'Cause that Cedartown gal ain't breathing..." (Jennings 1971)

This scenario presents a breach of the narrator's values that is soon met with lethal violence.

A similar situation is described in another of Reed's (1993) examples. In the song "Kate" by Johnny Cash, the narrator finds himself jailed for murdering his wife.

However, he is not so quick to accept responsibility for the actions leading to his incarceration. The narrator seems to be engrossed in the culture of honor, as he looks on the infidelity of his wife as a justification for his actions:

“Saw you with another  
And it made me lose my mind  
Shot you with my '44  
And now I'm doin' time  
And you put me here...” (J. Cash 1972)

Again, honor seems to play a part, as an insult in the form of a cheating spouse results in a violent and justified act for someone living in this culture. It is also important to note that the narrator in “Kate” sees little wrong with his actions as he blames his dead wife repeatedly for his current incarceration.

Still other examples Reed (1993) uses from country music call attention to the idea that all violence is not glorified. In fact, the use of violence in some cases, especially when it seems to indirectly insult or injure a third party, is seen as a violation of the values of Southern culture. These violations are, of course, responded to violently. One example is evident in “Coward of the County” performed by Kenny Rogers. The protagonist here, Tommy, is a young male that promised his father that he would take on a different life, one not so focused on violence and debauchery. As a consequence, he is viewed as a “coward” as the song title suggests, and his significant other, Becky is even preyed upon by a few unsavory residents of their county, the Gatlin boys. The use of violence here is clearly not acceptable when viewed through the lens of the local culture, and initiates a violent response out of Tommy, who was clearly not prone to violence earlier in the song. Tommy’s justification is given in the next to last line of the song in a

comment meant for his father: “sometimes you gotta fight when you’re a man” (Rogers 1980).

To recap, there is a sizable discussion regarding the South and violence. Many commentators on Southern culture (such as W. Cash, Reed, and Wyatt-Brown) clarify the phenomenon evident in the statistics on violent crime, by calling attention to cultural issues regarding the South. Namely, the frontier nature of the South at its earliest settlement and continuing to the Civil War, contributed to the use of violence for self-protection and for the maintenance of personal honor. In essence, it is used for what Black (1983) calls “self-help social control,” or the enforcement behavioral norms and prevention of norm violations as well as victimization. This discussion of violence in the South is lacking a clear empirical test, linking violence as measured by violent crime statistics and the cultural attitudes and beliefs found in works referring to the culture of honor and the link between violence and honor in the South. However, in the late 1960’s, empirical tests of Southern violence begin to surface, thus adding to the established literature regarding violence and Southern culture.

### **2.3 The Beginnings of Empirical Research on Southern Violence**

In the late 1960’s and early 1970’s, discussions of urban subculture and violence, such as Wolfgang and Ferracutti (1967) intermeshed with discussion of violence in the Southern United States and led sociologically-minded researchers such as Sheldon Hackney (1969) and Raymond Gastil (1971) to perform empirical research, examining the Southern homicide rate while controlling for structural indicators, such as poverty and other measures of deprivation. Their chief argument was that if these indicators could not account for the influence of a Southern measure (in a regression model, for example),

it is reasonable to conclude that culture, and not structural factors as previous theory suggests, may have an influence on Southern homicide. Hackney used a standard dummy variable approach to measuring “South,” but Gastil used a rather unique “Southernness index,” assigning numerical values, ranging from 5 to 30, to each of the 48 contiguous states related to the level of migration of Southerners into these areas in the years before and after the Civil War<sup>3</sup>.

Gastil and Hackney’s work focused on examining regional differences in homicide net of relevant controls for affluence. Gastil’s (1971) study focused on states and used a Southernness index as a measure of South. His findings indicated that states with a high score on the Southernness index also had high rates of homicide, despite controls for poverty, literacy rates and the number of hospital beds per 100,000 residents. Hackney’s (1969) study on the other hand, explored the homicide rates of Southern and non-Southerners as well as whites and non-whites. Hackney found that despite controls, a Southern dummy variable remained significant in a model predicting the white homicide rate, indicating that the difference in the South and other regions cannot be explained by structural factors. Despite these findings, Gastil and Hackney’s research

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<sup>3</sup> Gastil offers a more detailed explanation of the “Southernness index” including the rules followed during its construction:

“(1) Give scores of 30 to Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, and Arkansas... (2) Give scores of 5 to states with only indirect Southern influence and virtually no white Southern population (New England and most Upper North Central states). (3) Give scores of 20 to states with about half of the population of Southern background and a Southern majority at the time of first settlement... (4) Give scores of 25 to states with overwhelming Southern background and a white population primarily from the South, but with strong non-Southern minorities that have preserved some independence from this heritage by virtue of a separate existence or recent movement to the area. (5) Give 15 to definitely non-Southern states with a strong representation of Southern population in either the formative period or more recently. (6) Give 10 to states overwhelmingly non-Southern, but with a weak Southern representation in the population or a Southern cultural influence in the formative period.” (Gastil, 1971: p. 425).

would be critiqued and re-examined, chiefly for failing to adequately control for the influence of structural factors.

#### **2.4 The Structuralist Critique and Evidence “Against” Culture**

The primary critique for researchers advocating a subculture of violence comes from researchers in a macro structural framework. These structuralists argue that the overall makeup of a community in terms of disadvantage, typically measured by multiple variables indicating deprivation, inequality, household type and educational structure of communities, can affect the adherence to norms and the rates of crime in these communities. One macro structural argument, the social disorganization perspective, argues that disadvantage influences the ability of communities to transmit and regulate a common set of norms and approved success goals. In the presence of multiple sources of disadvantage, the traditional institutions of social control begin to fail (see Bursik 1988).

Additionally, a strain perspective would argue that this resource deprivation produces deviant adaptations when traditional success goals are blocked due to a lack of opportunity. This goal blockage can then lead to either a change in the values dealing with success and what constitutes success or the routes for the pursuance of success. Thus, violence and other types of criminal activity may increase due to the deregulation of norms and the pursuance of alternate means for achieving societal or cultural goals (see Merton 1938). In the end both the strain and social disorganization camps present an effect of structure on the basic norms of a community, and when these norms are affected, one of the possible outcomes is an increase in crime. Thus, it is a community's structural framework in reference to disadvantage and inequality that is important in predicting crime, instead of its cultural context.



Although it wasn't very well articulated at the time, several researchers drew from this macro structural framework and developed models with theoretically sound measures of macro level structural characteristics and re-examined the Gastil-Hackney thesis by including a dummy variable for South along with their structural independent variables. One of the earliest well-known re-examinations came from Loftin and Hill (1974). Loftin and Hill argued that disadvantage and poverty accounted for the higher levels of homicide in the South and suggested an index they named the Structural Poverty Index (SPI) as an adequate measure to capture this disadvantage. Their SPI included measures of extreme poverty, illiteracy, educational disadvantage, unemployment and other factors, all of which are relatively high in the Southern states. By introducing this SPI into a regression model similar to Gastil and Hackney's, they provide a more adequate measure of the structural characteristics that influence homicide and thus provide an adequate control for structure. Using a series of regression models, Loftin and Hill demonstrated that their SPI does indeed outweigh culture in the South (i.e., it reduces the effect of a Southern dummy variable to insignificance).

Similarly, Smith and Parker (1980) analyzed the utility of the SPI for states, but separated homicide rates into classifications indicating whether they were primary (or homicides between acquaintances or family members) or non-primary (or those between strangers and those committed in the course of another crime). They find that Loftin and Hill's (1974) SPI is a significant predictor in relation to primary homicide, but has no effect on the non-primary rate. Also, they find no significant South effect for either of the types of homicide, thus providing corroborating evidence of Loftin and Hill's (1974) findings regarding subcultural explanations. Later on, Loftin and Hill's (1974) and Smith

and Parker's (1980) work was heavily critiqued for relying on states as their unit of analysis (see Messner 1983a). Even though this was done to allow comparison with previous work, states were simply not regarded as the best geographic units for expressing a community or culture.

Messner (1983a) continued the regional subcultural debate and reported that location in the Southern region of the United States significantly affects an SMSA's (Standard Metropolitan Statistical Area) homicide rate when poverty and other demographic variables (namely percent black, infant mortality rates, the percentage of persons 25 and over with less than five years of education, the percentage of families with an annual income less than \$1000, etc.) are controlled. Messner used a "Confederate dummy" (as suggested by Hackney) as well as Gastil's "Southernness index" to measure the effect of the Southern region. In both cases, the variables indicating Southern region (the dummy variable and the Southernness index) were found to be significant positive predictors of homicide rates in SMSA's.

Replicating Messner's (1983a) study involving homicide rates in SMSA's, Parker (1989) showed that a dummy variable for Confederate South was not a significant predictor of urban homicide rates when several controls for measurement error were introduced into the model. Parker further stated that the use of dummy-variables for region (1=South, 0=other, etc.) does not adequately measure the multitude of cultural aspects that need to be represented when discussing a regional subculture.

Additionally, in their landmark study of inequality and violent crime in the metropolis, Blau and Blau (1982) failed to find an effect for a Southern dummy variable in the presence of sound structural controls, most notably their measures of inequality.

However, this study was later duplicated with a different measure of South, the percentage in an SMSA that indicated they were born in the South (See Blau and Golden 1986). The results of the replication indicated that measures of structural disadvantage and inequality did not eliminate the effect of South, providing conflicting evidence, at least at the SMSA level.

In short, studies residing in the macro structural framework (Blau and Blau 1982; Blau and Golden 1986; Loftin and Hill 1974; Messner 1983a; Parker 1989) produce inconsistent conclusions about the relationship between culture and violence in the South. While their theoretical explanations are generally some of the most popular in criminology and their strategy of introducing a Southern dummy variable (or the more rare percent born in the South) in the presence of macro structural control variables is fairly common, the results from these studies are often contradictory, as discussed above. Again, the use of a Southern dummy variable is a common approach in evaluating the subculture of violence thesis in a macro structural model, but it has been criticized extensively (see Ellison, 1991; Parker 1989).

In brief, the dummy variable approach relies on an unmeasured residual as the indicator of culture. By controlling for all the logical and known structural covariates of violence in a model predicting violence (usually homicide), the presence of a Southern effect indicates that something other than structure is working to produce higher levels of violence (again, see Ellison 1991; and Parker 1989 for criticisms of this approach). Thus some unmeasured construct, assumed to be culture, is the culprit. In this line of reasoning, one glaring problem emerges: we cannot be reasonably sure that culture is the unmeasured construct. Instead, it could simply be an unmeasured structural variable

exerting its influence through the residual, a problem commonly referred to as unobserved heterogeneity.

Another relevant issue is that of the culture / structure dichotomy. The previous macro level studies seem to suggest that culture and structure are in a sense in opposition, that is if structure cannot explain regional differences in violence, culture must be the only other option. Conversely, if culture were directly measured and failed to explain regional differences in violence, structure would likely be the assumed cause. It is, however, plausible that both cultural and structural factors contribute to regional variation in violence. This has been suggested in much of the macro level research on violence in urban neighborhoods. Theorists such as William Julius Wilson (1987) and Elijah Anderson (1999) present analytical models where extreme levels of structural disadvantage and specific cultural attitudes and values contribute to higher levels of violent crime in the inner city.

In order to improve on past macro level studies, a few researchers have selected more relevant dependent variables for testing subcultural arguments related to Southern violence. Some have disaggregated homicide by circumstance (Smith and Parker 1980; Bankston, et. al. 1985) indicating that the distinction between primary (or argument-based) homicide and non-primary (or felony-based) homicide is an important distinction to make, since past theoretical arguments indicate that the subculture of violence is chiefly related to some type of dispute resolution and not necessarily for material gain. Others have chosen to disaggregate homicide rates by race (Allen, et. al. 1981) in testing the subculture of violence. Again, there is precedent in past theory, as many refer to the Southern subculture of violence as primarily a white phenomenon. Both approaches

represent significant, though often overlooked, strides in empirically testing for a subculture of violence at the macro level. However, the continued use of a Southern dummy variable as the independent variable measuring culture remains a significant weakness of macro level research in this area. This approach limits the ability of researchers to draw definite conclusions regarding subcultural theory and to evaluate the independent contributions of structure and culture. For this reason, some researchers have focused on the micro level framework to study cultural attitudes toward violence and which group or groups possess them. The next section will delineate this particular line of research, including its main findings as well as its strengths and criticisms.

## **2.5 Individual Attitudes and Violence in the South**

While the majority of the research empirically testing the Southern subcultural thesis does appear to be at the macro level, there are several notable studies that present a micro approach to evaluating a Southern subculture of violence. The majority of these are accomplished by comparing the attitudes of Southerners in relation to acceptance of violent behavior to those of other regions, given relevant controls for personal income, education level, age, and religious denomination, for example.

Dixon and Lizotte (1987) used General Social Survey data from 1973, 1976, 1980 and 1984, to examine attitudes toward violence. They divided the questions regarding violence into two categories: those suggesting defensive attitudes and those suggesting purely violent attitudes. They interpreted their findings to indicate no significant difference in attitudes toward violence between “those socialized in the South and currently residing there” (Dixon and Lizotte 1987: 397) and those either socialized or currently residing in another region. They further conclude that violent attitudes are

“more likely to be found among rural dwellers and among whites” (Dixon and Lizotte 1987: 398-399). In a notable set of commentaries however, Ellison and McCall (1989) and Corzine and Huff-Corzine (1989) both heavily criticized Dixon and Lizotte for incorrectly interpreting their results, and concurred that in fact their results supported the notion that Southerners are more supportive of violence in defensive situations.

Ellison (1991) also used GSS data to evaluate regional differences in approval of violence. He found that Southerners were more likely to approve of violence in “defensive” situations, namely situations where a child was being harmed, a woman was being harmed or when someone interrupted a burglar in their own home<sup>4</sup>. These attitudes held with several relevant control variables from the GSS, such as urban residence, gender, age, education level, income and previous exposure to violence. Ellison also found that older Southern natives were more likely to hold these particular attitudes than younger Southerners, which may be interpreted as evidence that the subculture of violence in the South is losing its hold. One of the more interesting findings from Ellison’s (1991) research is the ties of Southern violent attitudes to religion. Ellison linked conservative religious ideology, such as an authoritative view of God, and frequency of religious attendance to support for “defensive” violence. This seems to indicate that religion in the South is a dominant institution in socializing favorable attitudes toward violence for the purposes of defense, which is in opposition to the idea of

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<sup>4</sup> While these situations Ellison (1991) discusses can be viewed as defensive in nature, it is simply not possible to infer too much from the GSS questions that he uses to measure defensive violence. Whether these situations are defensive or offensive is simply up to the respondent, and without some type of follow-up question this dichotomy that Ellison makes is essentially questionable. For example, when looking at the items he does not include in the measure of defensive violence, we find one item that later researchers discussing the subculture of violence often call attention to, the HITDRUNK item. This item refers to whether or not a respondent would approve of an adult male stranger hitting a drunken man who bumped into him and his wife as they were walking down the street. If we interpret this situation, as many scholars have, as an insult and consider the act of violence as a defensive response to a perceived insult, it becomes difficult to consider this situation “purely offensive” or “purely violent.”

religious involvement and participation reducing levels of deviance and criminal activity, by fostering conformity (see Stark 1996; Lee and Bartkowski 2004).

Drawing on this finding regarding religion, Ellison, Burr and McCall (2003) examine the prevalence of conservative Protestantism at the macro level and its relationship to homicide. They found that a measure of conservative Protestantism substantially reduced the effect of a Southern dummy variable in a model predicting homicide rates at the MSA level. Taken together, these studies seem to indicate that religious affiliation and religious ideals are an important but often neglected dimension in the study of Southern violence. It is important to note here that Ellison is not arguing that conservative Protestants or religious fundamentalists themselves are violent or criminal in their behavior. To do so would be to commit the ecological fallacy (Robinson 1950). Instead, the argument simply points to the fact that a dominant social institution in the South, and to a lesser extent in other areas, with a focus on vengeance<sup>5</sup> as a part of its main tenets, may have some legitimizing effect for violent behavior used in certain contexts in the surrounding community.

It is also noteworthy to mention that this linkage between Southern violence and conservative Protestant religious culture is not alien to the literature. Dickson Bruce (1979), for example, mentions several noteworthy issues regarding Southern evangelicals and violence. First of all, there is the general view of life through a pessimistic lens. In describing this pessimistic view towards life, Bruce (1979) wrote of the Southern evangelicals description of human existence: “human beings, weak and corruptible, were

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<sup>5</sup> In mentioning “vengeance” as a tenet of conservative Protestantism, I am referring to the “Eye for an eye” belief present in conservative religious doctrine, and the focus on the Old Testament view of God, which is seen as a more authoritative or even vengeful entity. This has been discussed previously by Ellison (1991; Ellison, et al 2003) as well as Bruce (1979) and Roof and McKinney (1987).

also pretty much alone as they faced the trials and temptations the world had to offer” (Bruce, 1979; p.13). When he later comments on frontier life in the South, Bruce revisits this idea of a solitary existence, hinting that it certainly does not discourage the use of violence for protection, or for maintaining honor. He adds that, religious or not, residents of the Southern frontier thought of violence as necessary in standing up to the unsavory characters they were likely to encounter. Put simply violence was viewed “as a normal means of settling disputes” even by the most devout Southern evangelicals on the frontier (Bruce, 1979; p.91).

Again, in returning to the ecological fallacy, it is not necessary to interpret Ellison’s (1991; Ellison, et al. 2003) finding as indicative of higher levels of violence among conservative Protestants. Instead, as we see from Bruce (1979), we can simply regard conservative Protestantism (or Southern evangelicalism, as he refers to it) as simply having little effect in suppressing violent behavior, due to some of its core tenets. Perhaps the more important finding from Ellison (1991) has to do with the use of violence in “defensive” situations. While it may be easy to find problems with the situations he regards as “defensive,” or more importantly those he sees as definitely *not* defensive, the idea of the use of violence for defense in the South is an important contribution to the literature, and is expounded upon later by Nisbett and Cohen (1996) in their discussion of the “culture of honor” in the South.<sup>6</sup>

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<sup>6</sup> Again, I am referring to the notion that without a follow-up question or some other type of deeper information, one cannot assume those scenarios Ellison (1991) regards as “offensive,” or “violence for the sake of violence” are not interpreted by a Southerner as some type of defensive response to a breach of an honor code.



## **2.6 The Culture of Honor in the South**

In one of the best articulated arguments regarding the Southern culture of violence to date, Nisbett and Cohen (1996) argue that the Southern culture of honor, as they call it, is not a general Southern cultural phenomenon. Instead, they argue that it resides in a specific group of people, mainly Southern white males from rural areas. As stated earlier, they argue that some of the first ethnic groups migrating to the South, mainly Scotch-Irish, were met with specific conditions that led to the development of a culture that accepts violent behavior as a form of social control. These cultural norms were then passed to future generations and still may have a hold on Southern whites in the present.

In their discussions of the culture of honor, Nisbett and Cohen (1996) provide evidence from a variety of sources to substantiate their claims. First, they examine homicide rates for Southern and non-Southern locations and find that for argument-based homicide, the South is much higher than areas we would consider non-South. When we recall previous research, especially Smith and Parker's discussion of primary homicide (1980), this is nothing new. However, it is important in the context of Nisbett and Cohen's (1996) theory, which has previously been detailed. If their culture of honor is indeed operating in the South, and it is a culture based on using violence as a response to insults or interpersonal disputes, it is important to establish that argument homicide is higher in the South, since higher rates of this type of homicide may be seen as evidence for a subculture condoning the use of violence, and in some cases lethal violence, to solve a dispute.

Nisbett and Cohen (1996) discuss several additional forms of evidence for a culture of honor among Southern whites. They show evidence of Southerners possessing

higher than average levels of approval for violence in several situations, such as when handling some type of interpersonal dispute or for the protection of family and property. Their discussion of attitudes condoning violence does not end there, however. It seems that Southerners are also more approving of use of force by law enforcement when some type of protest or riot situation is involved as well as more general forms of criminal behavior. Additionally, when examining social institutions, such as criminal law, Nisbett and Cohen find that Southern law is more punitive in two senses. First of all, while the South is very similar to the West in the percentage of states that allow capital punishment in contexts of homicide, it is remarkably dissimilar when discussing the percentage of cases that actually result in an execution and the percentage of states that have recently carried out such executions.

Another common form of state-sanctioned violence, if you will, is corporal punishment, or the use of physical force to discipline a child. In 1993, according to data cited by Nisbett and Cohen, less than 15% of Southern states had some type of statute prohibiting corporal punishment, and it was more likely to take place within the context of school, as a higher percentage of Southern children received corporal punishment in school during previous years. The data mentioned here on corporal punishment is also not surprising. Reed (1971) found that Southerners were not only more likely to approve of corporal punishment in general, but also more likely to approve if a teacher was administering the punishment, when compared to residents from other regions.

Further research of the Nisbett and Cohen argument reveals that Southern white males residing in rural areas indeed have higher rates of acceptance of violence, but seem to stand out only when overall support for violence is relatively low (Hayes and Lee

2005). However, the Nisbett and Cohen argument has not been applied successfully to the macro level, as it calls for higher rates of violence in specific culturally-defined situations. Testing such a theory would require measures of these specific incidents of violence, and macro level measures of cultural attitudes.

## **2.7 Shortcomings in Past Research**

Past research on the subculture of violence in the South is divided between macro level studies, which evaluate the role of structural covariates of violence in the South; and micro level studies, which evaluate individual attitudes toward violence and the regions or groups of people in which we find the strongest support. However, both frameworks suffer from serious shortcomings in directly testing the theory in which they are grounded. The macro level studies are very strong in evaluating differences in violent social behavior (usually homicide) between the South and other regions while controlling for other factors, but one crucial element of the theory is missing: a direct measure of cultural attitudes. On the other hand, the micro level studies are strong in providing some measure of cultural attitudes but are decisively weak in controlling for structural level factors, or relating these attitudes to an independent measure of social behavior.

In addition, the macro level studies frequently ignore more relevant dependent variables for testing the arguments made by statements of the Southern subculture of violence. While these variables are not always ignored (see Smith and Parker 1980; Allen, et. al. 1981; Bankston, et. al. 1985; and Rice and Goldman 1994), many rely on a measure of total homicide rather than using race specific or even circumstance specific measures. Nisbett and Cohen's (1996) statement of the culture of honor, for example, clearly calls for a test of white homicide rates, rather than total rates. Not only that, it

also calls for measures of argument homicide, since the culture of honor is more likely to come forth in the context of an interpersonal dispute.

Perhaps what needs to be done is some combination of measures from both types of data, macro and micro. Given the right conditions, micro level measures of attitudes toward violence could be aggregated to a macro level unit, such as a Primary Sampling Unit (PSU) as used by the General Social Survey (GSS). This would create an aggregate measure of a cultural attitude imbedded in a particular area, and would give the opportunity to use the traditional macro level measures of structural covariates of homicide and the use of homicide itself as an independent measure of social behavior. This approach would produce a stronger test of the theory than simply relying on macro or micro level frameworks separately, since it would allow for the evaluation of the effects of structural and cultural variables on violence independently, as well as the effect of one set of variables controlling for the other.

## **2.8 Statement of Hypotheses**

Several general hypotheses can be drawn from the previous literature that could be tested with the proposed approach.

Hypothesis 1: The greater the tolerance of violence, the higher the homicide rate.

This will be especially true for white offender homicide and white argument homicide.

Hypothesis 2: The measure(s) of aggregate cultural attitudes will reduce any effect of Confederate South on homicide to insignificance.

Hypothesis 3: The effect of aggregate cultural attitudes on homicide will be greater within the former Confederate South.

Hypothesis 4: The effect of cultural attitudes on homicide will be greater where there are higher proportions of conservative Protestants.

When combined with the method introduced above, these hypotheses are designed to provide a more definitive test of the subculture of violence in the South. Most notably, if it is indeed culture that drives the remaining effect of a measure of South in previous macro level studies, then the introduction of an appropriate independent variable measuring culture in a model predicting homicide should reduce the effect of South to insignificance. If this is not the case, it would suggest that something other than culture is influencing violence in the South.

Moreover, a test of the Southern subculture of violence should produce the clearest results when a relevant dependent variable is used. In this case, the theory tends to suggest that white offenders should be the focus, as well as argument-based homicides, since they imply violence as the result of an interpersonal dispute. Therefore, the focus in analysis should be on models predicting white argument homicide. Also, if the ideas of Ellison (1991; Ellison, et. al. 2003) and others are correct, the presence of high proportions of conservative Protestants should amplify any effect of subcultural attitudes toward violence on the prevalence of violence in a given area. The next section introduces a research design to test these hypotheses, including detailed descriptions of the data necessary, and the specific variables needed from these data.

## **CHAPTER 3: DATA AND METHODS**

This project will utilize data from a number of different sources, including the General Social Survey (GSS), the Uniform Crime Reporting Program's Supplementary Homicide Reports (SHR) and the United States Census. These sources of data will be merged using the Primary Sampling Unit codes acquired from the administrators of the GSS, which indicate the general geographic location of each respondent in the GSS survey at the time of the interview. The following sections briefly describe each of the major datasets utilized in this project, followed by a more detailed description of the proposed study, including the variables used and their datasets of origin and an overall modeling strategy.

### **3.1 Description of the Data**

#### **3.1.1 The General Social Survey**

The General Social Survey (GSS) is a semi-annual (biannual beginning in 1996) omnibus survey of U.S. households on a variety of social issues. The GSS selects its households from Primary Sampling Units (PSU's), which consist of Standard Metropolitan Statistical Areas (SMSA's) and non-metropolitan counties, stratified by relevant demographic variables before selection (such as age structure, race, income level, etc). A list of the counties within each PSU was obtained from the administrators of the GSS for use in this study.

The current sampling strategy for the GSS uses a three-stage full probability sampling design based on the most recent U.S. Census data beginning with Standard Metropolitan Statistical Areas and non-metropolitan counties in the first stage, block groups and enumeration districts in the second stage, and if necessary the segments

would be further divided and sampled for a third stage. The final stage of sampling would include households selected from the block groups and enumeration districts or segments. The end result is a national sample of about 2500+ U.S. households; the actual sample size varies depending on the year (Davis, Smith and Mardsen 2001).

For example, in the first stage of the 1990 national sample, a sample of these SMSA's and counties was drawn based on systematic selection. The probability of a SMSA or a county being selected was based on the number of housing units. In the second stage, the sample SMSA's and counties are further divided based on Census block groups and enumeration districts. These divisions or segments were then again systematically selected based upon number of housing units. Each selected segment was required to have at least 50 housing units. If not, they would be combined with neighboring segments to make the 50-unit requirement. If needed, a third stage consists of further dividing a segment from the second stage sample and selecting one section from that segment, again based on number of housing units. This third stage would only take place if there were several disproportionately large segments in the SMSA and they were selected for the second stage sample. (Davis, et al. 2001).

### **3.1.2 The UCR Supplementary Homicide Reports**

The Supplementary Homicide Reports (SHR) are a subset of data tabulated from the FBI's Uniform Crime Reporting (UCR) system. Unlike traditional UCR Summary data that only provides a count of incidents in a particular geographic unit, the SHR provides detailed "incident" level data for each of the known homicides occurring in the United States for a given year, based on data obtained regarding the offender or offenders at the time of arrest, as well as victim characteristics uncovered during the investigation.

Each homicide incident contains information on the race, age, and sex of the victim and offender, as well as information regarding the victim/offender relationship and the circumstances of the homicide incident. These data are widely used by macro level homicide researchers and are routinely used to construct disaggregated homicide rates, by race, age or gender for example (Fox 2005).

### **3.1.3 The United States Census**

The United States Census provides a number of variables of interest to macro level researchers, including measures of individuals in poverty, individuals classified as unemployed, and counts of female headed households. The variables of interest to the present study will be drawn from Summary Tape File 3C (STF3C) of the 1990 Census (U.S. Department of Commerce 1993). STF3C is a publicly available data file available for download from the Census Bureau's website as well as from the Inter-University Consortium for Political and Social Research (ICPSR) located at the University of Michigan.

### **3.1.4 The 1990 Census of Churches and Church Membership**

The 1990 Census of Churches and Church Membership, conducted and produced by the Glenmary Research Center, provides county level statistics on 133 Judeo-Christian denominations. Each denomination was surveyed on the number and locations of their churches and the number of members and adherents within each. These figures were tabulated and used to construct county-level counts of church congregations, membership, and adherents for each of the 133 denominations. The principal investigators of the study recommend using total adherents when computing measures relating to the percentage of practicing members in the total population of a given county



(see Bradley, Green, Jones, Lynn and McNeil 1992). The county level data file for this study was obtained online at The Association of Religion Data Archives (<http://www.thearda.com>).

### **3.2 The Present Study**

This project included data from a variety of sources to produce a study of Southern violence designed to address several relevant critiques. Data from the 1988-1994 General Social Survey files on attitudes towards violence (i.e., the HIT series of questions) were aggregated to the PSU level for merging with data from a variety of other sources. Data on race-specific homicide offending rates as well as rates for total, argument and felony homicide for the years 1988-1994 was constructed from the Uniform Crime Reporting Program data and the Supplementary Homicide Reports. Finally, data on community structure and disadvantage from the 1990 Census was included to produce relevant independent and control variables for analysis, and a measure of conservative Protestant adherents imputed from the Glenmary data was added. The years 1988-1994 were chosen primarily due to the availability of data in the GSS for the HIT question series, which is the primary independent variable in the study. Data from the UCR and its Supplementary Homicide Reports were drawn from the same years to produce a congruent final dataset. A list of the cities and counties represented in this dataset is provided in Table 1.

#### **3.2.1 Dependent Variables**

The primary dependent variables for this study are measures of homicide as measured by the FBI's Uniform Crime Reporting Program. The dependent variables

**Table 1. List of Locations Represented by Primary Sampling Units in the Full Sample (N=80).**

Alamosa Costillo, CO	El Dorado - Alpine, CA	New York, NY
Albany, NY	Eugene, OR	Nicholas County, KY
Atlanta, GA	Fresno, CA	Oklahoma City, OK
Atlantic City, NJ	Ft. Wayne, IN	Philadelphia, PA
Baltimore, MD	Grand Rapids, MI	Phoenix, AZ
Bedford County, TN	Hale County, TX	Pittsburgh, PA
Bellingham, WA	Harrisburg, PA	Portland, OR
Birmingham, AL	Houston, TX	Providence, RI
Boston, MA	Indianapolis, IN	Provo-Orem, UT
Buffalo, NY	Jackson, MI	Ramsey County, ND
Bulloch County, GA	Jackson, MS	Richmond - Petersburg, VA
Burke County, ND	Jacksonville, FL	Robeson County, NC
Cape Girardeau County, MO	Kansas City, MO	Saginaw - Bay City, MI
Carbon County, WY	Knoxville, TN	San Diego, CA
Charleston, SC	Lakeland, FL	San Francisco - Oakland - San Jose, CA
Charlotte - Gastonia, NC	LaSalle County, IL	Sanilac County, MI
Chicago, IL	Lawrence County, PA	Schuyler County, NY
Citrus County, FL	Los Angeles, CA	Seattle, WA
Cleveland, OH	Madison, WI	St. Louis, MO
Columbus, GA	Manchester, NH	Starke County, IN
Columbus, OH	Miami, FL	Steubenville, OH
Crenshaw County, AL	Milwaukee, WI	Tampa - St. Petersburg - Clearwater, FL
Dallas - Fort Worth, TX	Minneapolis - St. Paul, MN	Vernon Parish, LA
Dayton, OH	Monroe County, AR	Waco, TX
Denver-Boulder, CO	Montgomery County, VA	Washington, DC
Des Moines, IA	Mower County, MN	Wheeling, WV
Detroit, MI	New Haven, CT	

Note: The White Sample includes McAllen, TX and drops Indianapolis, IN and Birmingham, AL for a sample size of 79.

measure the total, argument and felony rates of homicide among all offenders and among white offenders. While it may also be desirable to examine rates constructed for African American offenders, there are simply not enough cases in the GSS data to provide a minimum level of African American respondents to aggregate to the PSU level.

To construct the homicide rates, I drew data from the UCR and its Supplementary Homicide Report (SHR) data archive for 1988 to 1994 (Fox 2005). The total rate of homicide was drawn from the main UCR data file and the race and circumstance specific data from the SHR data file. To indicate felony homicides, all circumstance codes in the SHR dataset under the heading of felony homicide were used. These include homicides committed in the context of another index crime (rape, robbery, assault, larceny, motor vehicle theft, burglary or arson) as well as sex offenses not covered by rape, drug and gambling offenses. To indicate argument homicides, the circumstance codes indicating lover's triangles, brawls induced by alcohol or narcotics, arguments over money or property and any other specified argument were used. Finally, all homicides with a white offender, as well as argument and felony homicides with a white offender were used to construct the white-specific rates of homicide (see the codebook accompanying Fox 2005 for more).

To produce PSU-level counts of homicide, the data on homicide from the SHR were first aggregated to the originating agency, then to the county level using the publicly available crosswalk file from the National Archive of Criminal Justice Data (NACJD). Finally, using the information from the administrators of the GSS, NORC, I took the county-level counts and aggregated again to the PSU level, resulting in yearly counts of total, argument and felony homicide per PSU. I then summed and averaged the seven

years of data and divided by the population estimates from the United States Census to produce an average homicide rate at the PSU level. These procedures are congruent to those suggested by Osgood and Chambers (2000) and used by many macro level researchers of homicide.

Numerous criticisms have been leveled against the use of official crime data; including errors in reporting and completeness of coverage (see Gove, Hughes and Geerken 1985). While these criticisms may have some general validity in reference to official statistics, homicide is widely considered as the most reported crime due to the nature and seriousness of the offense. There is no indication in the research that homicide uniquely suffers from the cited problems of coverage and completeness, and if anything, would be less prone to such problems when compared to less serious offenses. Additionally, these data are widely used among macro level homicide researchers. A minimum level of comparison with previous research is desirable, thus it is necessary to rely on similar data and procedures. Furthermore, although the SHR data are considered substantially complete, offender race is missing for a considerable portion of the data. A common and widely used procedure has been established by Fox (2004) for the imputation of offender race and is used here to construct the white-only rates of homicide.

Theory tends to suggest that homicide, and generally violence, in the South may be used as a form of informal social control (see Black 1983; Nisbett and Cohen 1996; Ellison 1991). Theory also tends to suggest that in a culture of honor, violence is an acceptable means of dispute resolution (Nisbett and Cohen 1996). This is evident in past empirical work calling attention to primary homicide, or homicide between intimates as

the most appropriate dependent variable for testing hypotheses related to the subculture of violence in the South (Smith and Parker 1980; Bankston, et al. 1990). However, there are situations outside the context of primary homicides that may also illustrate the type of scenario calling for a violent response, either for the purposes of social control or for the purposes of dispute resolution. In short, it would not just be an argument with an intimate partner or family member that would call forth a violent response, it would be any argument. For this reason, models predicting rates of argument based homicide will be compared with the overall homicide rate and rates of felony-related homicide to provide a clear comparison between circumstances where the subculture of violence is expected to surface with circumstances where there is no theoretical reason to suspect that the subculture of violence will have a part.

### **3.2.2 Main Independent Variables**

The main independent variable in this analysis will be constructed from the individual level responses to the series of HIT questions from the GSS data. They include a series of six questions regarding a respondent's approval of an anonymous stranger acting violently in general and in five specific scenarios. The first item (HITOK) asks "Are there any situations that you can imagine in which you would approve of a man punching an adult male stranger?" The second item (HITBEATR) asks, "Would you approve of a man punching an adult male stranger if the adult male stranger was beating up on a woman and the man saw it?" The third item (HITCHILD) asks the respondent "Would you approve of a man punching an adult male stranger if the adult male stranger had hit the man's child after the child accidentally damaged the stranger's car?" The fourth item (HITDRUNK) asks "Would you approve of a man punching an adult male

stranger if the adult male stranger was drunk and bumped into the man and his wife on the street?” The fifth item (HITMARCH) asks “Would you approve of a man punching an adult male stranger if the adult male stranger was in a protest march showing opposition to the other man’s views?” Finally, the sixth item (HITROBBR) asks, “Would you approve of a man punching an adult male stranger if the adult male stranger had broken into the man’s house?” These data are aggregated to the PSU level and indicate the percentage of respondents within a particular PSU indicating an affirmative answer to the specific question.

While the general approval of violence represented by the HITOK variable may be the most clear-cut in its influence on violence, the theoretical background provided by the culture of honor discusses approval of a violent response under very specific circumstances, such as the protection of family and property (see Nisbett and Cohen 1996). Therefore, the use of situational variables that closely approximate the scenarios outlined in the theory would be desired (such as the HITDRUNK and HITROBBR variables). The five specific situational variables were subjected to a Principal Components Analysis in an effort to reduce them into a few meaningful indices rather than analyze the individual effects of each variable.

There will be two strategies implemented in measuring “South.” First, to provide a measure of the geographic location of a particular PSU in the Southern region, a Confederate dummy variable will be used. This deviates slightly from the recent tradition of using a dummy variable indicating the Southern region from the United States Census. However, use of the Census South has long been criticized for not accurately reflecting a true cultural region and including several states that are not

typically considered “Southern,” such as Maryland, Delaware, and Oklahoma. The second approach to measuring “South” in macro level research is a measure of the percentage of the population born in the South as derived from the U.S. Census (see Blau and Golden 1986). An alternate set of models using this measure of South will be presented in Appendix B.

With regards to religious denomination, previous research suggests that conservative Protestant or fundamentalist religious ideology tends to be related to violent attitudes and to levels of violence in communities in the South (see Ellison 1991; Ellison, et. al. 2003). For this reason, a variable indicating the proportion of respondents who report involvement in conservative Protestant religious denominations will be constructed for the PSU level using county level data from the 1990 Census of Churches and Church Membership, commonly referred to as the Glenmary data.<sup>7</sup> This variable will include the denominations used from the 1980 Census of Churches by Ellison, Burr and McCall (2003) to the extent that the 1980 data and the 1990 data overlap. A list of the denominations used from the 1990 data to construct the measure of conservative Protestantism is provided in Appendix A.

### **3.2.3 Other Independent and Control Variables**

In reviewing research on homicide at the macro level, several common control variables tend to surface as relevant. First and foremost, to control for the known structural correlates of homicide and for the macro structural theories of crime as

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<sup>7</sup> The variable indicating conservative Protestant membership is correlated highly with measures of South, such as the Confederate dummy variable or proportion born in the South. In a sense this means that conservative Protestantism may simply be another way of measuring South. Models were estimated including the proportion of conservative Protestant and the Confederate South dummy variable. According to the Variance Inflation Factors for these models (presented later) the results are not due to multicollinearity.

alternative explanations to culture, an index of disadvantage is created using Principal Components Analysis. Such a measure has been used in numerous studies, including many discussed in the previous chapter (Loftin and Hill 1974; Messner 1983a; Smith and Parker 1980, for example). In this study, the index of disadvantage will include a measure of poverty as the proportion of individuals in a PSU with an income below the official poverty line, the proportion of female-headed households with children, the proportion of unemployed in the labor force (persons aged 16 to 64), and the proportion of high school dropouts above the age of 25. These measures will all be extracted from the 1990 Census data.

In addition to an index of disadvantage, it is also necessary to control for ethnic heterogeneity among the population. This is regarded as a common control of population composition especially relevant for research on homicide, as official data indicates that homicide offenders are most often African American. More importantly, a measure of ethnic heterogeneity can be used to capture the concept of heterogeneity highlighted by Shaw and McKay (1942) and subsequent researchers in the social disorganization tradition. The measure used here will deviate slightly from the more often used percent black and will instead compare the proportion of the population that is white to the proportion that is black, or African American, in an index of ethnic heterogeneity, commonly referred to as the Blau index because of its use by Peter Blau in *Inequality and Heterogeneity* (Blau 1977) and in subsequent works (see Blau, Blau and Golden 1985 for an example). The formula for the Blau Index is:

$$1 - \sum p_i^2$$



where  $p$  is the proportion of the population in a given category and  $i$  represents the number of categories employed. Being a measure of heterogeneity, high values on the Blau Index represent higher heterogeneity. The index also ranges from 0 to 1 with the extremes indicating perfect homogeneity (0) and perfect heterogeneity (1).<sup>8</sup> Other relevant control variables include the proportion in the crime prone age group (15-24 years of age) and a measure of the absolute size of the population in the PSU, which is expressed as a natural log to counteract skewness.

### **3.3 Analytical Strategy**

The general multivariate modeling strategy will begin with a series of bivariate correlations to inform the possible construction of indices for inclusion in the later regression models. This is a necessary step in evaluating the independent variables, as many may be correlated highly, which would violate one of the main assumptions of the linear regression approach. It seems likely, for example, that the indicators of disadvantage and the indicators of violent attitudes will be correlated with each other in such a way that it may present later problems in using linear regression. It may also be necessary to reduce these measures into indices to avoid taxing the degrees of freedom offered by a fairly modest  $N$  (an  $N$  of 80 for the full sample and an  $N$  of 79 for the sample considering only white respondents). Following the bivariate analysis, indices will be constructed using Principal Components Analysis for relevant variables. The results of the bivariate analysis and the data reduction by way of Principal Components Analysis are presented in Chapter 4.

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<sup>8</sup> The numerical values of the Blau Index indicate the probability that two randomly selected people in the population will belong to different groups.

Before detailing the strategy for the regression models to be used in the multivariate analysis, it is important to address an issue in using aggregated items from the GSS. Given the sampling design of the GSS, as was already discussed earlier, the number of respondents within each PSU for the HIT series varies significantly. Several steps were taken to reduce the effect of this variation on our statistics relating to the regression models. First of all, a minimum of 15 respondents within each PSU was used to establish a baseline level of responses necessary to draw meaningful inferences about an aggregate unit. Using these criteria, the full sample ranges from 15 to 249 with a mean of 51.79 and a standard deviation of 33.85. The white respondent sample ranges from 15 to 205 with a mean of 44.01 and a standard deviation of 26.63. This is consistent with previous research using aggregated GSS data (Rosenfeld, et. al. 2000; Baumer, et. al. 2001) and with other studies using aggregated survey data to approximate contextual effects (see Sampson 1988; Sampson and Groves 1989).

Secondly, a weight equal to the square root of the N within a PSU was constructed for use in the regression models. The weighting scheme was used because we would expect that, with an unequal N within each macro unit, there would be a problem with unequal error variances, and not necessarily that the estimates of our coefficients themselves would be biased. Weighting to correct the problem with unequal error variances helps to provide more robust measures of standard error, providing more accurate significance tests for the model coefficients (see pages 150-153 in Hanushek and Jackson 1977). This weighting scheme is also consistent with previous studies using aggregate GSS data (Rosenfeld, et al. 2000; Baumer, et al. 2001).

In addition to correcting for the variation in the within-PSU number of respondents, the models also include a common correction for spatial autocorrelation. The problem of spatial autocorrelation, or correlation among variables over space, tends to cause biased estimates of the standard errors associated with the point estimates in a regression context. The cluster function in STATA 8 allows the observations to be somewhat dependent within the specified clusters. In other words, the observations are only required to be independent across clusters and not within clusters. This procedure produces more robust estimates of standard error, regardless of the spatial correlation of variables in the model (see StataCorp 2003a).

The substantive portion of the multivariate analysis involved estimating Weighted Least Squares (WLS) regression models specifying argument-based homicide rates, felony-based homicide rates and the total rate of homicide as dependent variables. This model estimation followed three distinct stages for each dependent variable. Stage 1 consists of the introduction of relevant population controls and the measure of South, thus providing a baseline measure of the South effect. In Stage 2, the measure of structural disadvantage and ethnic heterogeneity was entered in one block, followed by the aggregated measures of violent attitudes from the GSS and the measure of conservative Protestant adherents, in a block of cultural measures. Stage 3 probes for interactions among the measure of South and other relevant variables, such as the measures of violent attitudes and conservative Protestant adherents.

It is relevant to mention that WLS regression is only one possible approach to analyzing these data. An alternative approach that has received support in recent years, following two influential papers (Osgood 2000; Osgood and Chambers 2000) is the use

of Poisson regression. Poisson-based estimators (particularly negative binomial regression) are appropriate when the dependent variable a) contains a multitude of numerical zeroes and/or b) when the dependent variable is a measure of a rare event, especially in relation to the population of study; both of which are conditions that do not sync well with the assumptions of linear regression procedures (see Liao 1994). While homicide is regarded as a rare event, this study utilizes PSU's as the primary unit of analysis; and in this case, most of the PSU's are representations of Standard Metropolitan Statistical Areas. Thus, a dependent variable of homicide would not be plagued with a substantial amount of zero counts as is the case with some studies of homicide that use counties or county-equivalents as their unit of analysis, and WLS regression may still be deemed appropriate. However, Poisson-based estimators can be considered an alternate strategy and will be used to further verify the results provided by the WLS regression models for this study. The estimation procedures for such models were conceptually the same as outlined above to facilitate comparison and tables derived from this alternate analysis method are provided in an appendix.

### **3.4 Descriptive Analysis for the Full Sample**

The first stage of the analysis will present descriptive statistics on the dependent and independent variables for the Full Sample. Table 2 presents selected measures of central tendency for homicide rates in the Full Sample, in the form of means and standard deviations, as well as the minimum and maximum values for each rate. Additionally, statistics for the Confederate and non-Confederate PSUs are provided. In examining the statistics for the total homicide rate, there are a few important things to mention. First of all, the total homicide rate is 8.121 per 100,000, but when we examine homicide for

**Table 2. Descriptive Statistics for Average Rates of Homicide among PSUs in Full Sample, 1988-1994 (N=80).**

	Mean	Standard Deviation	Min. to Max.
<b>Homicides per 100,000</b>			
Full Sample	8.121	5.453	.921 to 23.950
Confederate	11.837	6.212	2.349 to 23.950
Non-Confederate	6.528	4.239	.921 to 16.592
<b>Felony-based Homicides per 100,000</b>			
Full Sample	2.203	1.982	0 to 10.514
Confederate	2.690	2.457	0 to 10.514
Non-Confederate	1.995	1.723	0 to 7.860
<b>Argument-based Homicides per 100,000</b>			
Full Sample	3.388	3.240	0 to 15.051
Confederate	5.681	4.421	.191 to 15.051
Non-Confederate	2.405	1.905	0 to 7.477

Note: Homicide Rates above are computed as the average count for the period of 1988-1994 divided by the total population as estimated by the 1990 Census, then multiplied by 100,000. Rates of total homicide are computed directly from the Uniform Crime Reporting Program data files and rates of felony and argument homicide are computed using the Supplementary Homicide Reports.

PSUs in the former Confederate states (with a mean rate of 11.837) versus homicide for those outside the former Confederate states (with a mean rate of 6.528) the Confederate region has a rate 1.8 times higher than the remainder of the sample. This type of finding, as already mentioned, is the primary reason for the repeated attempts at explaining the disparity between Southern and non-Southern homicide. When examining the standard deviations for the statistics on total homicide (5.453 for the total rate; 6.212 and 4.239 for Confederate and non-Confederate respectively), we can see there is a great deal of variation within each measure.

The next section of the table provides statistics on felony-based homicides presented in the same fashion. There is no obvious difference between Confederate and non-Confederate PSUs here, with a confederate mean of 2.69 versus 1.995 for non-Confederates. It also appears that the rates of felony homicide are a bit modest in terms of variation when compared to the total rates, as the largest standard deviation here is 2.457 (among the Confederate PSUs). This does not approach even the smallest standard deviation among the total rates (4.239 for homicide among non-Confederate PSUs).

Finally, turning to argument-based homicide, we again see a great deal of difference between Confederate and non-Confederate PSUs. The mean rate of argument homicides for Confederate PSUs is 5.681 compared to 2.405 for non-Confederate PSUs. This translates to a rate that is more than twice the rate for non-Confederate PSUs. This rate also varies substantially when compared to the non-Confederate rate as indicated by the measures of standard deviation (4.421 for Confederate PSUs versus 1.905 for non-Confederate PSUs).

Table 3 reveals the selected descriptive statistics for the main independent variables of interest, the measures of violent attitudes aggregated from GSS data<sup>9</sup>. Again, the statistics presented include means for the Full Sample of PSUs as well as the Confederate and non-Confederate PSUs. These means indicate the average proportion of respondents among the PSUs indicating an affirmative response to the five scenarios offered by the HIT series of questions. For example, the mean of the Full Sample for the HITBEATR item indicates an average level of approval of .861 among the PSUs in the sample. In other words, of the respondents surveyed from the 80 PSUs included in this analysis, 86.1 percent responded “yes” when asked the HITBEATR question.

In examining the means for the HIT series, it is clear that there are two basic groupings represented. The first three questions listed in the table have a fairly high level of approval, with a mean indicating at the very least 60 percent approval for hitting in the three scenarios offered. The final two questions, HITDRUNK and HITMARCH, have an extremely low level of approval, with the largest total mean among these two questions being .082. Again, this mean indicates an average of only 8 percent approval among the PSUs in the sample. It is important to note here that the first three items listed; HITBEATR, HITROBBR and HITCHILD, do not seem to be valid measures of a subculture, since overall approval is high. This high level of approval suggests that most would agree that violence is justifiable in these situations, which does not seem to meet the criteria for a subculture (i.e., being set apart from other groups in some way; see Gordon 1947). Nevertheless, past researchers have used these items to indicate support for defensive violence (Dixon and Lizotte 1987; and Ellison 1991) and have argued that

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<sup>9</sup> The means of the HIT variables presented in Table 3 are based on data already adjusted for use in the WLS regression models. That is, they reflect PSUs with at least 15 respondents.

**Table 3. Descriptive Statistics for Measures of Violent Attitudes among PSUs in Full Sample, 1988-1994 (N=80).**

	Mean	Standard Deviation	Min. to Max.
<b>HITBEATR</b>			
Full Sample	.861	.066	.667 to 1.00
Confederate	.834	.077	.667 to .952
Non-Confederate	.873	.058	.682 to 1.00
<b>HITROBBR</b>			
Full Sample	.859	.074	.655 to 1.00
Confederate	.879	.063	.703 to .975
Non-Confederate	.851	.077	.655 to 1.00
<b>HITCHILD</b>			
Full Sample	.606	.010	.385 to .844
Confederate	.617	.093	.452 to .784
Non-Confederate	.601	.103	.385 to .844
<b>HITDRUNK</b>			
Total Sample	.082	.047	0 to .255
Confederate	.105	.043	.043 .185
Non-Confederate	.071	.045	0 to .255
<b>HITMARCH</b>			
Full Sample	.026	.025	0 to .125
Confederate	.036	.019	0 .085
Non-Confederate	.022	.027	0 to .125



such measures are valid indicators for the type of violence supported within the Southern subculture (Ellison 1991).

Table 4 shows measures of central tendency for the remaining independent and control variables. The first section details measures used to indicate South as well as a measure of conservative Protestantism previously used by Ellison, Burr and McCall (2003). The mean of the Confederate South dummy variable reveals that 30 percent of the PSUs in the sample are in one of the former Confederate states. The proportion born in the South measure, derived from the Census South, indicates an average of 32 percent Southern-born among the PSUs, and the mean for conservative Protestant adherents indicates that an estimated 14.3 percent of the average PSU adhere to a conservative Protestant belief system.

The second section of Table 4 reveals statistics for the four main measures of disadvantage, poverty, high school dropouts, female headed households and unemployment. The means here reveal the average proportion of individuals in each PSU that suffer from the particular measure of disadvantage. For example, an average of 13.3 percent of the population in each PSU falls below the poverty line.

The final section of Table 4 describes the population controls for ethnic heterogeneity, age structure and population size. The mean for the Blau Index, in this case comparing blacks to whites is .269 with a standard deviation of .167. The average proportion of individuals aged 15 to 24, a measure of the crime-prone segment of the population is .150 indicating this group makes up about 15 percent of the average PSU's population. The total population size of each PSU ranges from 6,725 to 17,953,372 with a mean of 1,576,481. As stated earlier, this variable will be logged, to counteract

**Table 4. Descriptive Statistics for Remaining Independent and Control Variables among PSUs in the Full Sample, 1988-1994 (N=80).**

	Mean	Standard Deviation	Min. to Max.
<b>Measures of South / Culture</b>			
Confederate South Dummy	.300	.461	0 to 1
P Born in South (Census)	.321	.355	.012 to .959
P Conservative Protestant Adherents	.143	.132	.007 to .625
<b>Disadvantage</b>			
P Individuals in Poverty	.133	.054	.053 to .359
P High School Dropouts over 25	.245	.078	.111 to .487
P Female Headed Households	.110	.025	.063 to .198
P Unemployed	.062	.016	.032 to .105
<b>Population Composition</b>			
Blau Index (Whites to Blacks)	.269	.167	.021 to .807
P Individuals Age 15 to 24	.150	.036	.084 to .337
Total Population Size	1576481	2853436	6725 to 17953372
Natural Log of Population Size	12.982	1.874	8.814 to 16.073

skewness, so the statistics reflecting the natural log of the total population size are also included.

It may also be important to examine differences in means for the variables in Table 4 between the Confederate and non-Confederate groupings as previously done for the dependent and main independent variables. It is especially important to do this since some previous studies have argued that differences in measures of structural disadvantage between the South and non-South are the primary explanation for the observed differences in homicide. Table 5 presents these statistics, primarily comparing the measures of disadvantage between Confederate and non-Confederate units. As we would expect, the Confederate South PSUs are remarkably higher on both proportion born in the South, and proportion of conservative Protestant adherents. It also seems that the Confederate PSUs are higher on most of the measures of disadvantage (poverty, high school dropouts, and female headed households), which makes sense given the arguments centering on structural disadvantage previously mentioned.

Several differences between Confederate and non-Confederate PSUs have been observed in the tables presenting measures for the Full Sample. It is important to examine whether these differences are statistically significant, using a T-test. The results of this examination are presented in Table 6. Several of the variables suspected to be significantly different between the Confederate South and the remaining sample, show highly significant T-values. For example, the total and argument rates of homicide are significantly higher among Confederate PSUs, as is expected given past research and theorizing on the Southern subculture of violence. Secondly, among the measures of violent attitudes, only those attitudes with substantially low levels of approval show

**Table 5. Descriptive Statistics for Independent and Control Variables in Full Sample Comparing Confederate and Non-Confederate PSUs, 1988-1994 (N=80).**

	<b>Confederate</b>		<b>Non-Confederate</b>	
	<b>Mean</b>	<b>S.D.</b>	<b>Mean</b>	<b>S.D.</b>
<b>Measures of South / Culture</b>				
P Born in South (Census)	.764	.174	.132	.214
P Conservative Protestant Adherents	.286	.130	.081	.070
<b>Disadvantage</b>				
P Individuals in Poverty	.172	.064	.117	.038
P High School Dropouts over 25	.303	.081	.220	.063
P Female Headed Households	.121	.031	.105	.020
P Unemployed	.064	.014	.061	.016
<b>Population Composition</b>				
Blau Index (Whites to Blacks)	.381	.156	.221	.149
P Individuals Age 15 to 24	.163	.056	.144	.021

**Table 6. T-Tests for Differences in Means Comparing Confederate and Non-Confederate PSUs in the Full Sample.**

	<b>T-Value</b>
<b>Measures of Homicide</b>	
Total Homicides per 100,000	4.438***
Felony-based Homicides per 100,000	1.447
Argument-based Homicides per 100,000	4.654***
<b>Measures of Violent Attitudes</b>	
HITBEATR	2.473
HITROBBR	1.534
HITCHILD	0.686
HITDRUNK	3.123***
HITMARCH	2.344**
<b>Measures of “Culture”</b>	
P Born in South (Census)	12.735***
P Conservative Protestant Adherents	9.117***
<b>Measures of Disadvantage</b>	
P Individuals in Poverty	4.828***
P High School Dropouts over 25	4.940***
P Female Headed Households	2.879**
P Unemployed	0.668
<b>Population Composition</b>	
Blau Index	4.346***
P Individuals Age 15 to 24	2.179*

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\* p<.05 \*\* p<.01 \*\*\*p<.001

significant Confederate / non-Confederate differences. In all three situations where the approval is high, there is no discernible difference between Confederate and non-Confederate PSUs. Finally, the measures of disadvantage and population structure seem, for the most part to be significantly higher among Confederate PSUs, as seen in the means presented earlier. The only exception here is the measure of unemployment, for which there is no significant difference between Confederate and non-Confederate PSUs.

### **3.5 Descriptive Analysis for the White Sample**

Tables 7 through 11 present descriptive statistics for the White Respondent sample of PSUs. Beginning with Table 7, we can see some similar patterns to those seen in the total sample of PSUs. There appears to be some difference in the white homicide rate between Confederate and non-Confederate PSUs as indicated in the first panel. The mean rate for Confederate PSUs (5.951 per 100,000) is almost two units higher than the non-Confederate rate (3.986 per 100,000). However, the difference in Confederate and non-Confederate units is most evident when examining white argument based homicides, where the Confederate rate is about 2.5 units higher. Again, there is no obvious difference between Confederate and non-Confederate white felony homicides.

Table 8 examines the measures of central tendency for the white respondents to the HIT series in the GSS. The differences among the HIT questions with very low levels of approval again seem to indicate that the Confederate PSUs have a greater approval of violence in those situations (HITDRUNK and HITMARCH). However, some of the items with high levels of approval have a greater difference here than among the total sample, especially the HITROBBR item. Recalling data from Table 3, the difference between the Confederate and non-Confederate PSUs for this question was only

about .028 or 3 percentage points. Here the difference is a bit higher at .042. The difference between these means was verified with a T-test, as was done before in the descriptive analysis of the total sample. The results of this t-test indicate a significant difference between Confederate and non-Confederate PSUs.

Table 9 presents the statistics for the remaining independent and control variables as measured in the white respondent sample. The first panel indicates the measures of South and the measure of conservative Protestants, which are identical to those presented before with the exception of sample size. It would be ideal to present measures specific to the white population, as is done for the measures of disadvantage, but the datasets from which these variables are derived (specifically the Census data used to construct Born in the South and the Glenmary data used to construct the measure of conservative Protestant adherents) are not amenable to constructing such measures. These statistics are again, comparable to those among the total sample with about 30 percent of the PSUs located in former Confederate states and an average of about 32 percent of the population within each PSU indicating they were born in the South.

The second panel of Table 9 presents white specific measures of disadvantage as derived from the 1990 Census. Of the white residents of these PSUs, about 11 percent are below the poverty line, 23 percent are high school dropouts and 5 percent are unemployed. Additionally, 9 percent of white households in this sample are female headed. The final panel presents statistics for the Blau Index, measured exactly as before, as well as the proportion of whites age 15 to 24, and the absolute size of the white population. An average of 14 percent of the white population falls within the age group specified, and the average white population among the PSUs is 1,194,501. Again, the

measure of white population size will be logged for use in the regression models presented later, so the mean and standard deviation of this logged variable are also presented.

Table 10 compares the means for the independent variables between the Confederate and non-Confederate PSUs. Again, the Confederate PSUs have a higher concentration of Southern-born residents (.751 compared to .132 in non-Confederate PSUs) and conservative Protestants (.273 compared to .081 in non-Confederate PSUs), which would be expected. With regards to the measures of disadvantage, the Confederate PSUs seem to have higher means for poverty and high school dropouts, but not necessarily for female headed households and unemployment. The means for the Blau Index are .383 for Confederate and .220 for non-Confederate, again indicating a higher degree of ethnic heterogeneity in the Confederate states, which is expected.

Table 11 reveals the results of a series of T-tests for the difference in means between Confederate and non-Confederate PSUs for the white respondent sample. Several similarities can be drawn to the T-tests already presented for the Full Sample. The mean for white homicide is significantly greater among the Confederate PSUs, as is the mean for the white argument homicide rate. When examining the means for the measures of violent attitudes, the means for HITDRUNK and HITMARCH are again significantly higher among the Confederate PSUs, but HITROBBR is as well. This difference may explain why past research has indicated a significant difference between Southern and non-Southern respondents on an index of defensive violence, which does contain HITROBBR.



**Table 7. Descriptive Statistics for Average Rates of White Homicide among PSUs in White Respondents Sample, 1988-1994 (N=79).**

	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min. to Max.</b>
<b>White Homicides per 100,000</b>			
White Sample	4.583	3.564	0 to 17.564
Confederate	5.951	3.918	.609 to 15.070
Non-Confederate	3.986	3.257	0 to 17.564
<b>White Felony-based Homicides per 100,000</b>			
White Sample	.941	.886	0 to 3.853
Confederate	1.000	.953	0 to 3.278
Non-Confederate	.915	.863	0 to 3.853
<b>White Argument-based Homicides per 100,000</b>			
White Sample	2.437	2.834	0 to 14.748
Confederate	4.175	3.925	.249 to 14.748
Non-Confederate	1.679	1.763	0 to 9.920

Note: Homicide Offending Rates above are computed as the average count for the period of 1988-1994, as derived from the Supplementary Homicide Reports, divided by the white population as estimated by the 1990 Census, and then multiplied by 100,000.

**Table 8. Descriptive Statistics for Measures of Violent Attitudes among PSUs in White Respondents Sample, 1988-1994 (N=79).**

	Mean	Standard Deviation	Min. to Max.
<b>HITBEATR</b>			
Total	.884	.058	.682 to 1.0
Confederate	.879	.055	.742 to .955
Non-Confederate	.886	.060	.682 to 1.0
<b>HITROBBR</b>			
Total	.861	.078	.613 to 1.0
Confederate	.891	.058	.765 to .972
Non-Confederate	.849	.083	.613 to 1.0
<b>HITCHILD</b>			
Total	.619	.108	.386 to .872
Confederate	.640	.097	.463 to .806
Non-Confederate	.610	.113	.386 to .872
<b>HITDRUNK</b>			
Total	.079	.046	0 to .195
Confederate	.107	.049	.032 to .194
Non-Confederate	.067	.039	0 to .195
<b>HITMARCH</b>			
Total	.024	.028	0 to .115
Confederate	.036	.031	0 to .115
Non-Confederate	.019	.025	0 to .104

**Table 9. Descriptive Statistics for Remaining Independent and Control Variables among PSUs in White Respondent Sample, 1988-1994 (N=79).**

	Mean	Standard Deviation	Min. to Max.
<b>Measures of South / Culture</b>			
Confederate South Dummy	.304	.463	0 to 1
P Born in South (Census)	.320	.351	.012 to .959
P Conservative Protestant Adherents	.139	.130	.007 to .625
<b>White Disadvantage</b>			
P Whites in Poverty	.106	.056	.036 to .398
P White High School Dropouts over 25	.225	.080	.099 to .499
P White Female Headed Households	.085	.013	.061 to .140
P Whites Unemployed	.053	.018	.024 to .133
<b>Population Composition</b>			
Blau Index (Whites to Blacks)	.270	.169	.021 to .807
P White Age 15 to 24	.144	.038	.083 to .334
White Population Size	1194501	1996526	6628 to 12586355
Natural Log of White Population Size	12.762	1.847	8.799 to 16.348

**Table 10. Descriptive Statistics for Independent and Control Variables in White Respondent Sample Comparing Confederate and Non-Confederate PSUs, 1988-1994 (N=79).**

	<b>Confederate</b>		<b>Non-Confederate</b>	
	<b>Mean</b>	<b>S.D.</b>	<b>Mean</b>	<b>S.D.</b>
<b>Measures of South / Culture</b>				
P Born in South (Census)	.751	.173	.132	.216
P Conservative Protestant Adherents	.273	.135	.081	.071
<b>White Disadvantage</b>				
P Whites in Poverty	.133	.077	.094	.040
P White High School Dropouts over 25	.273	.091	.204	.065
P White Female Headed Households	.081	.017	.087	.010
P White Unemployed	.053	.021	.054	.016
<b>Population Composition</b>				
Blau Index (Whites to Blacks)	.383	.156	.220	.150
P Whites Age 15 to 24	.157	.060	.139	.022

**Table 11. T-Tests for Differences in Means Comparing Confederate and Non-Confederate PSUs in the White Respondent Sample (N=79).**

	<b>T-Value</b>
<b>Measures of Homicide</b>	
White Homicides per 100,000	2.316**
White Felony-based Homicides per 100,000	0.386
White Argument-based Homicides per 100,000	3.918***
<b>Measures of Violent Attitudes for Whites</b>	
HITBEATR	0.469
HITROBBR	2.260**
HITCHILD	1.127
HITDRUNK	3.861***
HITMARCH	2.563**
<b>Measures of “Culture”</b>	
P Born in South (Census)	12.388***
P Conservative Protestant Adherents	8.305***
<b>Measures of White Disadvantage</b>	
P Whites in Poverty	2.925**
P White High School Dropouts over 25	3.842***
P White Female Headed Households	-1.898
P Whites Unemployed	0.168
<b>Population Composition</b>	
Blau Index	4.362***
P Whites Age 15 to 24	1.943*

---

\* p<.05, \*\* p<.01, \*\*\*p<.001

There are some measures of white disadvantage with greater means in the Confederate South. The mean for whites in poverty and the mean for white high school dropouts are both higher among the Confederate PSUs, but the means for white female headed households and white unemployment among Confederate units are not significantly different than those among non-Confederate ones. As expected, the mean value on the Blau Index is also significantly higher for the Confederate PSUs.

### **3.6 Summary of the Descriptive Analysis**

To sum up, the descriptive analysis reveals some significant differences among both the dependent and independent variables in terms of a unit's presence in the former Confederate South. First of all, the means for both total and white homicide are higher among the Confederate South. This difference seems to be the product of a higher rate of argument violence, both among the total and among whites, in the Confederate South. This difference in argument homicide rates is expected and fits well with recent subcultural explanations of Southern violence.

Secondly, the measures of violent attitudes aggregated from the GSS vary significantly between Confederate and non-Confederate PSUs. The most obvious variation is present among the two items where approval is very low, HITDRUNK and HITMARCH. However, it is worth noting that among white respondents the HITROBBR item is also higher in the Confederate South, which as already mentioned may be driving some of the previously used indices of defensive violence in micro level studies of the Southern subculture of violence. While the measures of violence with low approval in the general population have held for Southern white rural males in a micro level model including relevant controls (Hayes and Lee 2005), it is important to

determine whether the differences in means observed at a macro level here will also hold with controls.

Finally, several of the measures of disadvantage and the remaining population controls show strong Confederate / non-Confederate differences. The variables indicating poverty, high school dropouts and female headed households were significantly higher in the Full Sample. Among whites, only poverty and high school dropouts show significant differences. The Blau Index is also significantly higher among the Confederate PSUs, as is the variable for age structure (15 to 24 year olds) selected to represent the crime prone group. These differences buttress the argument for their inclusion as relevant control variables in a model predicting homicide.

## CHAPTER 4: BIVARIATE AND MULTIVARIATE ANALYSIS

### 4.1 Bivariate Correlations

Before proceeding to the multivariate regression models, it is necessary to examine some bivariate correlations between the independent variables. Table 12 presents the first of the bivariate correlations, examining the correlations among the HIT series aggregated to the PSU level. Among both samples, three of these variables, HITBEATR, HITROBBR and HITCHILD, are correlated significantly. In the Full Sample, as presented in panel A of the table, these correlations are significant, but modest. The largest correlation among these variables is .489, between HITBEATR and HITROBBR. The same pair has a correlation of .624 in the white respondent sample. The two remaining variables (HITDRUNK and HITMARCH) appear uncorrelated in both samples. These two variables reflect scenarios in which a violent response received very little approval according to the descriptive analysis.

Table 13 presents bivariate correlations for the measures of disadvantage in each sample. These variables are all significantly correlated in both samples. Additionally, several of these measures have relatively high correlations. The correlation between poverty and High School dropouts for example is .711 in the full sample and .688 in the white sample. Poverty and unemployment are also highly correlated, with a coefficient of .586 in the full sample and .692 in the white sample. Given past research on disadvantage, these findings are not unexpected. However, they may indicate possible problems with including these variables in a linear regression model given the assumptions regarding multicollinearity. These findings also suggest that the measures may be prime candidates for some type of data reduction.



**Table 12. Bivariate Correlation Matrix for the HIT series.**

<b>Panel A. Full Sample (N=80)</b>					
	I.	II.	III.	IV.	V.
I. HITBEATR	1.00				
II. HITROBBR	.489**	1.00			
III. HITCHILD	.339**	.424**	1.00		
IV. HITDRUNK	-.034	.083	.085	1.00	
V. HITMARCH	-.213	-.019	.162	.167	1.00
<b>Panel B. White Sample (N=79)</b>					
	I.	II.	III.	IV.	V.
I. HITBEATR	1.00				
II. HITROBBR	.624**	1.00			
III. HITCHILD	.365**	.414**	1.00		
IV. HITDRUNK	.100	.215	.145	1.00	
V. HITMARCH	-.185	.116	.068	.142	1.00

\* p<.05, \*\* p<.01

Note: The variables in Panel A are the aggregates of all GSS respondents to the given question, while the variables in Panel B are the aggregates of white respondents to the GSS item.

**Table 13. Bivariate Correlation Matrix for the Measures of Disadvantage.**

<b>Panel A. Full Sample (N=80)</b>				
	I.	II.	III.	IV.
I. Poverty	1.00			
II. HS Dropouts	.711**	1.00		
III. FH Households	.345**	.412**	1.00	
IV. Unemployment	.586**	.560**	.268*	1.00
<b>Panel B. White Sample (N=79)</b>				
	I.	II.	III.	IV.
I. Wh. Poverty	1.00			
II. Wh. HS Dropouts	.688**	1.00		
III. Wh. FH Households	.268*	.340**	1.00	
IV. Wh. Unemployment	.692**	.591**	.536**	1.00

\* p<.05, \*\* p<.01

#### **4.1.1 Data Reduction**

The two main groups of independent variables described in tables 12 and 13 are very similar in nature, and thus, we would expect that some of the measures within each group will be highly correlated. However, as stated before, this can cause problems with multicollinearity in the linear regression analysis. Since a few of these correlations are fairly high, it is necessary to reduce these measures into meaningful indices, if possible, in order to curtail problems with multicollinearity.

A series of Principal Components Analyses was conducted to construct indices of violent attitudes and of disadvantage. The results of these analyses are presented in Tables 14 and 15. Table 14 presents the results regarding the measures of violent attitudes within each sample. In both cases, two Indices were extracted and rotated using a common variant of oblique minimum rotation (Promax rotation, see Kim and Mueller 1978). The first Index, in both samples, consists of the HITBEATR, HITROBBR and HITCHILD items. This is not entirely unexpected as these items received similar levels of support, according to their means. Likewise, the remaining items, HITMARCH and HITDRUNK, loaded on a second Index in both samples.

In past research, the HITBEATR, HITROBBR and HITCHILD items have been used as a measure of defensive violence and the remaining two items HITMARCH and HITDRUNK as a measure of offensive violence or violence for the sake of violence. Instead of applying such labels to these factors I have chosen to describe the first Index as Common Violent Attitudes, as it consists of the three items that have means over .60 in each sample, indicating that an average of at least 60 percent of the respondents in each PSU indicate approval of violence in these situations. The second Index will be labeled

**Table 14. Principal Components Loadings for the Measures of Disadvantage.**

	Full Sample	Whites Only
Poverty	.868	.851
HS Dropouts	.877	.831
FH Households	.588	.621
Unemployment	.782	.889
Eigenvalue	2.479	2.590

**Table 15. Principal Components Loadings for the Measures of Aggregated Violent Attitudes.**

	Full Sample		Whites Only	
	Index 1	Index 2	Index 1	Index 2
HITBEATR	.798		.889	
HITROBBR	.829		.838	
HITCHILD	.714		.667	
HITMARCH		.820		.871
HITDRUNK		.638		.586
Eigenvalue	1.846	1.273	2.017	1.180

Extreme Violent Attitudes, since the two items have very low levels of approval, on average.

While the components of the Common Violent Index have been used in the past as valid indicators of subcultural values, at least one of the components of the Extreme Violent Index has strong face validity in terms of measuring the type of subcultural response indicated as important by Nisbett and Cohen (1996). The HITDRUNK scenario is equivalent to the concept of a relatively minor insult or slight that according to Nisbett and Cohen (1996) should be met with violence in a culture of honor. The second component does not seem as strong in terms of face validity, but could still be seen as a minor insult. When considering this and the idea that higher scores on the Extreme Violent Index would indicate areas that approve of violence in situations beyond what is common, or normal, the Extreme Violent Index appears to be the best indicator of subcultural values approving of violence in the available data.

#### **4.1.2 Correlations Between Dependent and Independent Variables**

Table 16 presents bivariate correlations for the dependent and independent variables in each sample. Several things are of note here. First, there is a significant observed association between the measure of Confederate South and homicide, but it is most notable for argument homicides in both samples. Conversely, there is no significant association between the Confederate South measure and felony homicide in either sample. The Disadvantage Index is also correlated with total and argument homicide in the Full Sample, but there are no significant correlations between the index and the measures of homicide in the white sample. Of the two indices reflecting violent attitudes, the Extreme Violent Index is significantly and positively correlated with total (.343) and

argument (.427) homicide in the full sample and white argument homicide in the white sample (.357). The measure of conservative Protestant adherents within a PSU is also significantly correlated with argument homicide in both samples. This correlation is also in the suspected direction indicating an increase in the proportion of conservative Protestant adherents corresponds to an increase in total and argument homicide rates. Finally, two variables, the Blau Index and the logged measure of population size are correlated consistently across the measures of homicide with only one exception: the logged white population is not correlated with white argument homicide. The measure chosen to represent the crime prone age group is not significantly correlated with any measure of homicide, but it is still theoretically a valid control variable and will be included in the analysis.

#### **4.1.3 Correlations Among Independent Variables**

Before specifying the linear regression models, it is necessary to examine the bivariate correlations among the independent variables. This is necessary in order to examine the potential for multicollinearity among the independent variables. Tables 17 and 18 provide the bivariate correlations for the independent variables in the full and white samples. In the Full Sample there are a few moderate to high correlations between the proportion of conservative Protestant adherents and other independent variables, but these are not entirely unexpected given past literature. The strongest of these correlations is .718, between the conservative Protestant measure and Confederate South, indicating higher proportions of conservative Protestant adherents in Confederate South PSUs. The conservative Protestant measure is also positively and significantly correlated with the Disadvantage Index and with the Extreme Violent Index. This may be a byproduct of the

**Table 16. Bivariate Correlations between Dependent and Independent Variables.**

---

<b>Panel A. Full Sample (N=80)</b>			
	I.	II.	III.
Confederate Dummy	.393**	.090	.331**
P Born in the South	.436**	.137	.496**
Disadvantage Index	.343**	.022	.427**
Blau Index	.812**	.669**	.733**
Extreme Violent Index	.269*	.133	.273*
Common Violent Index	-.109	-.172	.002
P Conservative Protestant Adherents	.311**	.114	.382**
Logged Population Size	.465**	.540**	.262*
P Age 15-25	-.128	.027	.086
<b>Panel B. White Sample (N=79)</b>			
	IV.	V.	VI.
Confederate Dummy	.243*	-.006	.387**
P Born in the South	.288**	-.041	.516**
Disadvantage Index (Whites)	.083	-.215	.188
Blau Index	.616**	.488**	.693**
Extreme Violent Index (Whites)	.215	-.087	.357**
Common Violent Index (Whites)	.003	-.130	.113
P Conservative Protestant Adherents	.303**	.054	.399**
Logged White Population Size	.237*	.381**	.124
P Whites Age 15-25	-.017	.018	.007

---

\* p<.05, \*\* p<.01

Note:

- I. Ln Total Homicide Rate
- II. Ln Felony Homicide Rate
- III. Ln Argument Homicide Rate
- IV. Ln White Off. Homicide Rate
- V. Ln. White Felony Homicide Rate
- VI. Ln. White Argument Homicide Rate

association between conservative Protestant adherents and Confederate South, since higher levels of both Disadvantage and Extreme Violent Attitudes were observed among Confederate South PSUs in the descriptive analysis from the previous chapter, and both are positively correlated with Confederate South in the bivariate analysis.

## **4.2 Multivariate Analysis**

The multivariate analysis consists of a series of Weighted Least Squares models predicting various measures of homicide as dependent variables. The independent variables include a dummy variable indicating Confederate South, a Disadvantage Index, the Blau Index (reflecting ethnic heterogeneity), two indices reflecting violent attitudes (Common violent attitudes and Extreme Violent Attitudes), and a measure of the proportion of each PSU that adheres to conservative Protestant religious beliefs. Two rather common population controls are also introduced, including the natural logarithm of the absolute population size (or the white population size in the white sample), and the proportion of the population between the ages of 15 and 24, reflecting an element of the population that has a high incidence of criminal behavior.

The independent variables were entered in a series of models predicting three measures of homicide for each sample. The results of these regression models (including an examination of the standardized coefficients of the full models and interaction effects) are presented in Tables 19 through 28. In each table, the models progress in a similar fashion. Model 1 includes the Confederate dummy variable and the measures reflecting the natural log of the population size and the proportion of individuals between 15 and 24 years of age. This produces a baseline Confederate effect with some rudimentary population controls. In Model 2, the disadvantage index and the Blau Index is added,

thus evaluating the effect of past-used structural variables in explaining the differences in Confederate and non-Confederate rates of homicide. Model 3 adds the measures of culture, the Extreme Violent Index, the Common Violent Index and the proportion of conservative Protestant adherents in the population, and removes the measures of structure. This model evaluates the effect of culture in explaining differences in Confederate and non-Confederate homicide rates. Finally, Model 4 includes the Confederate dummy variable as well as the structural and cultural measures and the population controls. This model provides a traditional evaluation of structural and cultural explanations of the differences in Southern homicide, while controlling for the “competing” theory. These models are all estimated using Release 8.0 of Stata Statistical Software (StataCorp 2003b).

Taken together, this series of regression models allows for the evaluation of both structural and culturally based explanations for the South’s rates of homicide. While it is difficult to discern the individual effects of the variables in each model, it is possible to discern whether each block of variables reduces the effect of a Confederate dummy to insignificance, thus accounting for the regional difference in homicide. The full model (Model 4) extends this strategy by examining the effect of variables from each block while controlling for all other entered variables. Put another way, the full model allows for the evaluation of the effect of a single cultural, or structural, variable on the homicide rate while holding all other variables in the model at their mean value.



**Table 17. Bivariate Correlation Matrix of the Independent Variables in the Full Sample (N=80).**

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
I.	1.00								
II.	.822**	1.00							
III.	.438**	.529**	1.00						
IV.	.421**	.501**	.301**	1.00					
V.	.006	.126	-.086	.052	1.00				
VI.	.718**	.761**	.519**	.479**	.035	1.00			
VII.	.442**	.455**	.421**	.209	-.051	.363**	1.00		
VIII.	-.139	-.198	-.389**	-.227*	-.067	-.340**	.384**	1.00	
IX.	.240*	.230*	.118	-.021	.173	.178	.125	-.154	1.00

\*p<.05, \*\* p<.01

Note:

- I. Confederate Dummy
- II. P Born in the South
- III. Disadvantage Index
- IV. Extreme Violent Index
- V. Common Violent Index
- VI. P Conservative Protestant Adherents
- VII. Blau Index
- VIII. Logged Population Size
- IX. P Age 15-25

**Table 18. Bivariate Correlation Matrix of the Independent Variables in the White Respondent Sample (N=79).**

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
I.	1.00								
II.	.816**	1.00							
III.	.175	.209	1.00						
IV.	.471**	.535**	.373**	1.00					
V.	.139	.261*	-.044	.148	1.00				
VI.	.687**	.741**	.157	.424**	.175	1.00			
VII.	.445**	.454**	-.067	.199	.114	.344**	1.00		
VIII.	-.144	-.207	-.455**	-.217	-.021	-.356**	.380**	1.00	
IX.	.216	.209	.127	.047	.158	.138	.023	-.198	1.00

\*p<.05, \*\* p<.01

Note:

- I. Confederate Dummy
- II. P Born in the South
- III. Disadvantage Index
- IV. Extreme Violent Index (Based on White Respondents)
- V. Common Violent Index (Based on White Respondents)
- VI. P Conservative Protestant Adherents
- VII. Blau Index
- VIII. Logged White Population Size
- IX. P Whites Age 15-25

Two alternate analyses are presented in the Appendices following this volume. Appendix B includes a series of WLS regression models identical to those presented below with an alternate measure of South, the proportion born in the Census South region. Appendix C includes a series of Negative Binomial regression models with the same independent variables used below. The dependent variables for the Negative Binomial models reflect the full 7-year counts (rounded to the nearest integer) of the specific measures of homicide used below.

#### **4.2.1 Weighted Least Squares Models for the Full Sample**

Table 19 presents the results for the WLS regression with the total homicide rate as the dependent variable. The effect of Confederate South is significant in Model 1 and Model 2, suggesting that structure alone cannot account for the elevated rates of homicide in the South. For example, the coefficient for the Confederate dummy variable in Model 1 indicates, that when controlling for population size and age structure, the logged mean rate of homicide is higher in the Confederate South by .77 units. Put another way, even after we consider differences in population size and age structure, homicide rates are higher in the former Confederate South. In Model 2, the Confederate dummy variable remains significant, despite the introduction of the block of variables representing the structure hypothesis, indicating structure alone may not account for higher rates of homicide in the former Confederate South. The effect of the disadvantage index is not significantly different from zero, but the effect of the Blau Index is positive and significant, indicating that higher levels of ethnic heterogeneity may contribute to higher rates of homicide.

In Model 3, the structural variables are replaced with the block of cultural variables. In this model, the Confederate South effect is reduced to insignificance and the only cultural variable with a significant effect is the measure of conservative Protestant adherents, indicating that areas with a greater proportion of conservative Protestants in the population also have higher homicide rates. The two measures of violence have no significant effect in this model. Finally, in Model 4 there is some evidence that both the structural and cultural variables may be independently contributing to the variation in the homicide rate. The two structural variables, disadvantage and ethnic heterogeneity, are significant and positive, and the Extreme Violent Index is significant and positive. It is also noteworthy to mention that the measure of conservative Protestants is no longer significant, indicating that its relationship with homicide as shown in the previous model is spurious.

To evaluate whether the reductions in the Confederate South dummy variable are significant between models, a formula suggested by Paternoster, Brame, Mazerolle and Piquero (1998) was used. The formula is as follows:

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

This formula yields a z-score associated with the change in coefficients between two models by comparing the difference in their unstandardized coefficients ( $b_1$  and  $b_2$  respectively) divided by the square root of the sum of each standard error squared. When examining the coefficients for the Confederate dummy variable in Table 19, each subsequent model resulted in a significant reduction in the unstandardized coefficient.

The z-score between Models 1 and 2, representing the reduction by the structure

variables, is 4.281, which is significant. Likewise, the z-score for Models 1 and 3, representing the reduction from the culture variables is 3.654, which is also significant.

In Table 20, the models predicting felony based homicides as derived from the Supplementary Homicide Reports are presented, along with some unexpected findings. In Model 1, there is a significant and positive Confederate South effect, but it is reduced to insignificance when the structural variables are entered in Model 2. According to the Z test, this is a significant reduction, with a corresponding z-score of 3.405. Beginning in Model 3, with the introduction of the cultural variables, the Confederate South effect is significant, but in the opposite direction. However, in the context of a measure of felony homicide, this simply means that when we control for Extreme and Common Violent attitudes, as well as the proportion of conservative Protestants, population size and age structure, the mean rate of felony homicide is .397 units lower for Confederate PSUs (for Model 3). In other words, when controlling for the independent variables in the model, there are more felony homicides occurring outside the Confederate South. This coefficient becomes more substantial in the full model, and is significantly different from the coefficient in Model 1 (the z-score for the difference here is 5.664). One possible interpretation of this finding is that there is a greater share of non-felony types of homicide occurring in the Confederate South, which makes sense when we consider the past theoretical arguments stating that the subculture of violence is one that influences expressive, or argument based homicide, and not instrumental, or felony based homicide. Additionally, the change in the Confederate South dummy variable in these models indicates the existence of some suppressor effects. That is, the failure to control for the cultural variables presented in Model 3 yields an inaccurate depiction of the effect of the

Confederate dummy variable on felony homicide, as it is presented as positive and significant in Model 1, and is not significant in Model 2, before these variables were entered. The relationship in Models 3 and 4 implies that there are actually less felony homicides in the former Confederate South after considering the other variables in each model.

The effects for the Common Violent Index and the measure of conservative Protestantism in the final model are more difficult to interpret. The Common Violent Index displays a negative and significant effect on felony homicide, indicating that as these particular values increase, the rate of felony homicide decreases. This may be seen as a deterrent effect, which makes sense given the often-applied defensive label to the components of this index. The significant and positive effect of the conservative Protestant measure suggests that PSUs with higher proportions of conservative Protestant adherents also have higher rates of felony homicide when controlling for other factors. This is in direct opposition to the moral communities thesis which suggests that areas with high levels of religious involvement would have lower levels of crime (see Stark 1996; Lee and Bartkowski 2004). It is important to mention, given the counterintuitive nature of the finding, that this does not mean conservative Protestants themselves are committing more felony homicides. Instead it may point to what Bruce (1979) refers to as the negative cultural effect of conservative religious doctrine.

The final table in the analysis of the full sample, Table 21, shows the models in relation to argument homicide. The structure and culture variables both separately account for the difference in homicide rates between the Confederate South and the rest of the sample, as there is a significant coefficient for the Confederate South variable in

Model 1, but not in Model 2 or 3. The Z test indicates that the differences in the Confederate South coefficient between Models 1 and 2 (with a z-score of 2.778) and Models 1 and 3 (with a z-score of 2.062) are significant. Again, in the final model, both the Blau index and the Extreme Violent Index remain significant, indicating that both structure and culture may be independently contributing to the variation in argument homicide. It is also of note that the conservative Protestant variable, which was significant in Model 3, is reduced to insignificance in the full model. Again, this suggests that the relationship between conservative Protestants and homicide is spurious.

For Model 4, the slope for the Blau Index is 3.043, indicating an increase in the logged homicide rate of 3.043 units for a one-unit increase in the Blau Index. This type of interpretation is a bit problematic, however, since the Blau Index is a probability measure and only ranges from 0 to 1. Instead it may be easier to subject the coefficient to a simple transformation, by dividing it by 10, giving the increase in the logged rate of homicide for a .1 increase in the Blau Index. Thus a .1 unit increase in the Blau Index would result in a .304 increase in the logged rate of homicide. This suggests that areas with high levels of minority populations also have higher rates of argument homicide.

Before continuing to the white respondent sample, it is important to evaluate the strength of the coefficients already presented. Table 22 presents the standardized coefficients for the full models (Model 4) presented in the previous three tables. While these coefficients cannot be compared across models, they can be used to measure the relative strength of the variables in predicting the dependent variable within a particular model. Considering both independent and control variables, the Blau Index is clearly the

**Table 19. Weighted Least Squares Regression Models Predicting Total Homicide with Confederate South Dummy Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.770** (.112)	.265** (.037)	.314 (.055)	.125 (.122)
Disadvantage Index	---	.117 (.054)	---	.111* (.046)
Blau Index	---	2.549** (.329)	---	2.392** (.292)
Extreme Violent Factor	---	---	.116 (.063)	.067* (.024)
Common Violent Index	---	---	-.041 (.026)	-.009 (.033)
P Conservative Protestant	---	---	1.795** (.332)	.559 (.650)
<b>Controls</b>				
Logged Population	.210* (.058)	.105 (.057)	.247* (.060)	.125 (.065)
P Age 15-24	-3.235* (.986)	-4.107* (1.602)	-2.402 (1.040)	-3.696 (1.678)
Constant	-.562 (.801)	.386 (.845)	-1.297 (.840)	.060 (.968)
Model R-Square	.462	.767	.537	.779
F	21.74**	48.79**	14.12**	31.20**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.



**Table 20. Weighted Least Squares Regression Models Predicting Felony Homicide with Confederate South Dummy Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.306* (.113)	-.215 (.103)	-.397** (.042)	-.568** (.105)
Disadvantage Index	---	-.164 (.163)	---	-.204 (.185)
Blau Index	---	3.832** (.589)	---	3.486** (.642)
Extreme Violent Index	---	---	.165* (.069)	.114* (.039)
Common Violent Index	---	---	-.155 (.085)	-.147* (.059)
P Conservative Protestant	---	---	2.818** (.327)	1.697** (.224)
<b>Controls</b>				
Logged Population	.308** (.048)	.107 (.083)	.365** (.056)	.153 (.094)
P Age 15-24	2.565 (2.547)	1.135 (2.625)	4.223 (2.873)	2.537 (2.925)
Constant	-3.977* (.897)	-2.051 (1.179)	-5.159** (1.146)	-2.903 (1.345)
Model R-Square	.365	.579	.478	.629
F	14.54**	20.35**	11.14**	15.03**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table 21. Weighted Least Squares Regression Models Predicting Argument Homicide with Confederate South Dummy Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.751* (.221)	.036 (.132)	-.073 (.333)	-.330 (.211)
Disadvantage Index	---	.201 (.160)	---	.199 (.158)
Blau Index	---	3.449** (.633)	---	3.043** (.575)
Extreme Violent Index	---	---	.160* (.053)	.093* (.031)
Common Violent Index	---	---	.020 (.051)	.066 (.059)
P Conservative Protestant	---	---	3.496* (1.265)	1.815 (.940)
<b>Controls</b>				
Logged Population	.179 (.111)	.043 (.103)	.249* (.076)	.099 (.085)
P Age 15-24	1.179 (1.831)	.014 (2.671)	2.106 (2.367)	.427 (3.155)
Constant	-1.826 (1.528)	-.607 (1.356)	-3.120* (.931)	-1.437 (1.220)
Model R-Square	.212	.559	.345	.598
F	6.83**	18.74**	6.40**	13.20**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table 22. Standardized WLS Regression Coefficients from the Full Models  
Predicting Homicide in the Full Sample (N=80).**

	<b>Total</b>	<b>Felony</b>	<b>Argument</b>
<b>Independent Variables</b>			
Confederate Dummy	.079	-.266**	-.156
Disadvantage Index	.132	-.181	.179
Blau Index	.568**	.618**	.545**
Extreme Violent Index	.087*	.111*	.091*
Common Violent Index	-.012	-.142*	.065
P Conservative Protestant	.099	.225	.243
<b>Controls</b>			
Logged Population	.338	.307	.202
P Age 15-24	-.186	.095	.016
Model R-Square	.779	.629	.598
F	31.20**	15.03**	13.20**

most influential variable for each model, which is not surprising given the strong racial disparity in regards to homicide offending.

When examining the remaining independent variables, the strongest effect comes from the Disadvantage index for the dependent variable measuring total homicide and the measure of conservative Protestants for the remaining two dependent variables. It is of note that the Extreme Violent Index does not outweigh conservative Protestant in any of the three full models, but it does outweigh the effect of Confederate South for the full model predicting homicide. These findings do not bode well in providing support for the stated hypotheses, but according to past theory the more appropriate test is in relation to white homicide, and more specifically white argument homicide.

Theoretically, there is the potential for interactions among the set of predictor variables. Some of the more meaningful interactions to test in terms of the theory involve the interaction between the Confederate dummy variable and the measure of Extreme Violent Attitudes, as this allows the evaluation of the difference in the effect of the Extreme Violent Index between Confederate and non-Confederate PSUs. Another potential for interaction involves the proportion of conservative Protestants and the Extreme Violent Index. Here, the presence of an interaction would indicate a non-additive relationship between the two variables and suggest differential slopes for the Extreme Violent Index based on the levels of conservative Protestant adherents in the population. Each interaction term, with the appropriate component variables present, was entered in the full model (Model 4) for each dependent variable. The coefficients for the interaction terms and their components in the full sample are presented in Table 23.<sup>10</sup>

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<sup>10</sup> McClendon (1994) and Jaccard, Turrissi and Wan (1990) both suggest centering continuous variables on the mean to aid in interpretation of the interaction term in relation to the partial effects of the individual

The first panel indicates the coefficient for the interaction between the Confederate South dummy variable and the Extreme Violent Index. In the model predicting total homicide, the interaction term between Confederate South and the Extreme Violent Index indicates the difference in the slope between Confederate South and the reference group (zero on the Confederate South dummy variable). This interaction term is negative and significant, indicating that the slope of the Extreme Violent Index is lower by .280 units for the Confederate South. In other words, the effect of the Extreme Violent Index on total homicide is actually lower in the Confederate South. As first this seems counterintuitive, but once the findings for felony and argument homicide are examined, it becomes a bit clearer. The interaction term between Confederate South and the Extreme Violent Index for felony homicide is also negative and significant, again indicating that the effect of the Extreme Violent Index is lower in the Confederate South (for felony homicide).

When examining argument homicide as the dependent variable, the interaction term is no longer significant, but the sign also changes. If this were significant, it would suggest that for argument homicide, the effect of the Extreme Violent Index is actually higher within the Confederate South. This prediction would make sense, given the theoretical statements regarding the Southern subculture of violence, but there is no evidence of this in the data used here. Also, while the findings regarding the interaction in the model predicting total homicide seem to be in the opposite direction, this seems to be due to the significantly lower mean level of felony homicides in the Confederate South

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variables. For the interaction models presented, the variable for conservative Protestant adherents was centered by subtracting the individual values from the mean value in each sample. The Extreme Violent Index is a standardized index, and is already technically centered on its mean.

**Table 23. Coefficients for Interaction Effects and Components for the Full Sample (N=80).**

	<b>Total</b>	<b>Felony</b>	<b>Argument</b>
<b>Interaction 1: Confederate * Extreme Violence</b>			
Interaction Term	-.280**	-.328**	.075
Confederate South	.145	-.545**	-.335
Extreme Violent Index	.131	.190	.076
<b>Interaction 2: P Conservative Protestant * Extreme Violence</b>			
Interaction Term	-1.091**	-1.339**	.053
P Conservative Protestant	1.424**	2.759**	1.773
Extreme Violent Index	.068	.116*	.093*

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\* p<.05 \*\* p<.01

when accounting for the effect of the independent variables. Additionally, while the significant and negative effect for instrumental (felony) homicides may suggest to some a potential positive effect for more expressive forms of homicide, the interaction in the model predicting argument homicide is not significant.

The second panel in this table tests an interaction implied by researchers and theorists commenting on the conservative Protestant tradition in the South and its possible link to the subculture of violence (Bruce 1979; Ellison 1991; Ellison, et. al. 2003). Here, the presence of a significant and positive interaction term would indicate that the effect of Extreme Violence is higher in areas with a higher proportion of conservative Protestant adherents. However, the interaction term is negative in the models for the first two dependent variables, total homicide and felony homicide, indicating that, at least for this data, increased levels of conservative Protestant adherents can decrease the effect of Extreme Violent attitudes on total and felony homicide, which provides evidence for the moral communities thesis (Stark 1996). There is no significant interaction for the model predicting argument homicide, even though past theorizing would suggest a positive and significant interaction. At the very least, the absence of a significant interaction for argument homicide shows that conservative Protestantism does not decrease the effect of Extreme Violent attitudes on argument homicide.

#### **4.2.2 Weighted Least Squares Models for the White Sample**

Tables 24 through 28 present the results for the WLS analysis of the white sample, based on white respondents to the GSS questions. The first series of models, as presented in Table 24 indicate no difference between the former Confederate South and other PSUs on white offender homicide after controlling for population size and age

structure. There are also no effects regarding the measures of disadvantage, violent attitudes or conservative Protestants in the full model. In fact, the only consistent effect comes from the Blau Index, with an unstandardized coefficient of 2.57 in Model 4. The reduction of the conservative Protestant effect to insignificance in the full model again indicates that this effect, observed in the bivariate correlations and in Model 3 for this table, may be spurious.

Table 25 presents the models predicting white felony homicide, and again there is no significant difference between Confederate South PSUs and others across the four models. The Blau Index and the White Disadvantage Index have significant effects in Model 2, but the effect of white disadvantage is not significant in the full model. Like the previous models predicting white offender homicide, there are also no significant effects for the two measures of violent attitudes and the measure of conservative Protestants in the full model. This may seem to indicate little or no support for the stated hypotheses, but as stated before, white argument homicide is the most appropriate dependent variable.

The models predicting white argument homicide are presented in Table 26. Model 1 shows the effect of Confederate South net of controls for population size and age composition. As expected, this effect is positive and significant. However, with the introduction of the White Disadvantage Index and the Blau Index in Model 2, the effect is substantially reduced and is no longer significant. The Z test for the difference in the Confederate dummy coefficient between these two models indicates a significant reduction ( $Z=1.900$ ). The introduction of the cultural variables in Model 3 also reduces the coefficient for the Confederate dummy variable to insignificance, but the difference



in the coefficients between Models 1 and 3 is not significantly different from zero according to a Z test (the z-score associated with this difference is 1.119). This would suggest that culture alone cannot account for the regional differences in argument homicide among whites.

The coefficient for the Extreme Violence Factor is positive and significant in Models 3 and 4, indicating that where there are attitudes more accepting of violence among whites, there are also higher levels of white argument homicide. The coefficient for Model 4 is .114, indicating an increase of .114 in the logged white argument homicide rate for every 1 unit increase in the Extreme Violent Index, net of the other independent variables. This effect, which is consistently positive and significant across models 3 and 4, indicates additional support for the stated hypotheses in that Extreme Violent Attitudes are a positive and significant predictor of white argument homicide among PSUs, net of the effect of disadvantage, ethnic heterogeneity, conservative Protestant adherents, and other relevant variables.

Returning to the issue of strength of effects, Table 27 displays the standardized regression coefficients for the full models computed with the white sample. For each model, the strongest effect is again associated with the Blau Index, which is not surprising. In models predicting white offending, however, the interpretation is different than in the previous models indicating total offending. Given the strength of effect indicated by the standardized coefficients in the full models, and the significant and positive unstandardized coefficients for white offender, white felony, and white argument homicide, the findings for the Blau Index suggest that areas with higher rates of minority offending also have higher rates of white offending. In other words, the prevalence of

**Table 24. Weighted Least Squares Regression Models Predicting White Offender Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.409 (.275)	-.083 (.233)	-.121 (.731)	-.347 (.220)
White Disadvantage Index	---	.135* (.056)	---	.139 (.078)
Blau Index	---	2.848** (.449)	---	2.570* (.596)
Extreme Violent Index	---	---	.140 (.084)	.043 (.067)
Common Violent Index	---	---	-.069 (.051)	-.050 (.025)
P Conservative Protestant	---	---	2.412* (.739)	1.610 (.978)
<b>Controls</b>				
Logged White Population	.128** (.071)	.032 (.063)	.181* (.054)	.078 (.089)
P Whites 15-24	-.277 (1.180)	-.396 (1.282)	2.412 (.739)	.184 (1.678)
Constant	-.365 (1.064)	.264 (1.049)	-1.362 (.888)	-.475 (1.485)
Model R-Square	.135	.435	.238	.471
F	3.89**	11.24**	3.74**	7.78**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table 25. Weighted Least Squares Regression Models Predicting White Felony Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.031 (.214)	-.366 (.260)	-.280 (.232)	-.466 (.204)
White Disadvantage Index	---	-.063 (.058)	---	-.050 (.102)
Blau Index	---	2.472* (.832)	---	2.337* (.778)
Extreme Violent Index	---	---	-.040 (.165)	-.064 (.141)
Common Violent Index	---	---	-.143 (.110)	-.143 (.089)
P Conservative Protestant	---	---	2.158* (.752)	1.197 (.812)
<b>Controls</b>				
Logged White Population	.179** (.028)	.056 (.101)	.218** (.035)	.085 (.116)
P Whites 15-24	2.342 (1.976)	2.328 (1.955)	3.167 (1.884)	2.911 (1.975)
Constant	-2.736 (.800)	-1.697 (1.496)	-3.568* (.925)	-2.264 (1.799)
Model R-Square	.189	.381	.270	.428
F	5.82**	9.00**	4.43**	6.56**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table 26. Weighted Least Squares Regression Models Predicting White Argument Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate Dummy	.753* (.299)	.086 (.184)	.127 (.473)	-.188 (.318)
White Disadvantage Index	---	.193* (.072)	---	.187* (.069)
Blau Index	---	3.856** (.382)	---	3.591** (.637)
Extreme Violent Index	---	---	.248* (.067)	.114* (.032)
Common Violent Index	---	---	.016 (.105)	.042 (.049)
P Conservative Protestant	---	---	2.318 (1.731)	1.186 (1.637)
<b>Controls</b>				
Logged White Population	.103 (.114)	-.024 (.070)	.161* (.069)	.014 (.063)
P Whites 15-24	-.936 (1.199)	-1.102 (1.399)	-.019 (1.552)	-.761 (1.809)
Constant	-.821 (1.631)	.002 (1.112)	-1.796 (.966)	-.534 (1.126)
Model R-Square	.154	.535	.251	.560
F	4.54**	16.77**	4.03**	11.11**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table 27. Standardized WLS Regression Coefficients from the Full Models  
Predicting Homicide in the White Sample (N=79).**

	<b>White Offender</b>	<b>White Felony</b>	<b>White Argument</b>
<b>Independent Variables</b>			
Confederate Dummy	-.210	-.276	-.094
White Disadvantage Index	.177	-.063	.196*
Blau Index	.579*	.516*	.669**
Extreme Violent Index	.046	-.067	.102*
Common Violent Index	-.064	-.181	.044
P Conservative Protestant	.269	.196	.164
<b>Controls</b>			
Logged White Population	.198	.213	.030
P Whites Age 15-24	.010	.151	-.033
Model R-Square	.471	.428	.560
F	7.78**	6.56**	11.11**

homicide offending among African American and Hispanic populations (as well as other minority groups) has an impact on the prevalence of homicide offending among whites.

Among the remaining independent variables of interest, the full model indicates that the second strongest effect comes from the Disadvantage Index, but only for the model predicting white argument homicide, as this effect is not significant for the models predicting white offender or white felony homicide. While the Extreme Violent Index does not have a significant effect on white offender or white felony homicide, a significant beta is observed for the model predicting white argument homicide. This beta indicates that the Extreme Violent Index falls behind the Blau Index and the White Disadvantage Index in terms of relative strength within this model.

The interaction terms for the models predicting white homicide are presented in Table 28. A similar pattern to that observed in the results for the full sample presented above is apparent. The interaction term for Confederate South and the Extreme Violent Index again indicates that the slope of the Extreme Violent Index is significantly lower for Confederate South units than for the reference group (all non-Confederate PSUs) when considering white felony homicides. A similar finding is observed for the interaction between the conservative Protestant measure and the Extreme Violent Index, indicating that at higher levels of conservative Protestant adherents, the effect of the Extreme Violent Attitudes is diminished. Conceptually, this suggests that the effects of violent attitudes are lower where there are more conservative Protestants, but only for instrumental (felony) forms of homicide. Significant interactions are not observed for white argument homicide.

**Table 28. Coefficients for Interaction Effects and Components for the White Sample (N=79).**

	<b>White Total</b>	<b>White Felony</b>	<b>White Argument</b>
<b>Interaction 1: Confederate * Extreme Violence</b>			
Interaction Term	-.024	-.269*	.032
Confederate South	-.344	-.435	-.192
Extreme Violent Index	.052	.038	.102*
<b>Interaction 2: P Conservative Protestant * Extreme Violence</b>			
Interaction Term	-.036	-1.763**	.628
P Conservative Protestant	1.622	1.793	.974
Extreme Violent Index	.044	-.016	.097

\* p<.05 \*\* p<.01

### 4.3 Regression Diagnostics

There are several diagnostic tests commonly used when conducting regression analysis. One of the more common diagnostics involves evaluating the effect of multicollinearity among the independent variables on the results. To evaluate the effects of multicollinearity, Variance Inflation Factors (VIFs) were estimated on the full models for both the full and white samples. Among the Full Sample, the highest VIF observed was 2.79, for the logged population size. The mean VIF for the Full Sample was 2.06. While three of the variables have VIFs over Allison's (1999) rather strict criteria of 2.5 (Logged population size, the Blau Index and conservative Protestant Adherents), none are in excess of the standard of 4.0, a more common benchmark in the field (see Fox 1991). Among the white sample, similar VIFs were observed. The largest for the full model in the white sample was 2.42, for the measure of conservative Protestants, meeting the criteria set by Allison (1999), as well as the standards of the field.<sup>11</sup>

Two additional diagnostics involve probing for outlying and influential data and for heteroskedasticity. Regarding outlying data, several extreme outliers on the main independent variables (the disadvantage index and the violent indices) were removed prior to the multivariate analysis. Two cases were removed from the full sample and one from the white sample as their scores indicated a distance of more than 4 standard deviation units away from the mean. Additionally, the full models for each sample were evaluated for the presence of influential cases. The Cook's D statistic was computed for the full models of the variables in both samples as a means of identifying influential cases

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<sup>11</sup> The VIFs for the full models estimating each dependent variable are the same within each sample, since the same independent variables are used, rendering it unnecessary to discuss these particular diagnostics in terms of each dependent variable separately.



(see Fox 1991). While one case for the full sample was in excess of 3.0, the overall distribution of Cook's D was normal for the regression models in both samples.

Another potential problem with linear-based regression models is heteroskedasticity, or nonconstant error variance. This produces biased estimates of the standard error of the independent variables in the model and can result in inaccurate significance tests for the coefficients of the independent variables (see McClendon 1994). In terms of heteroskedasticity, the cluster procedure used on these regression models includes a more robust computation of the standard error estimates for the specified independent variables in the model (StataCorp 2003a). Therefore heteroskedasticity is not seen as an issue with the results presented earlier in the chapter. A final potential problem with regression analysis has to do with model misspecification. In order to evaluate whether the results were due to a misspecified model, a series of regression runs with an alternate measure of South, percent born in the Census South, are presented in a series of tables in Appendix B.

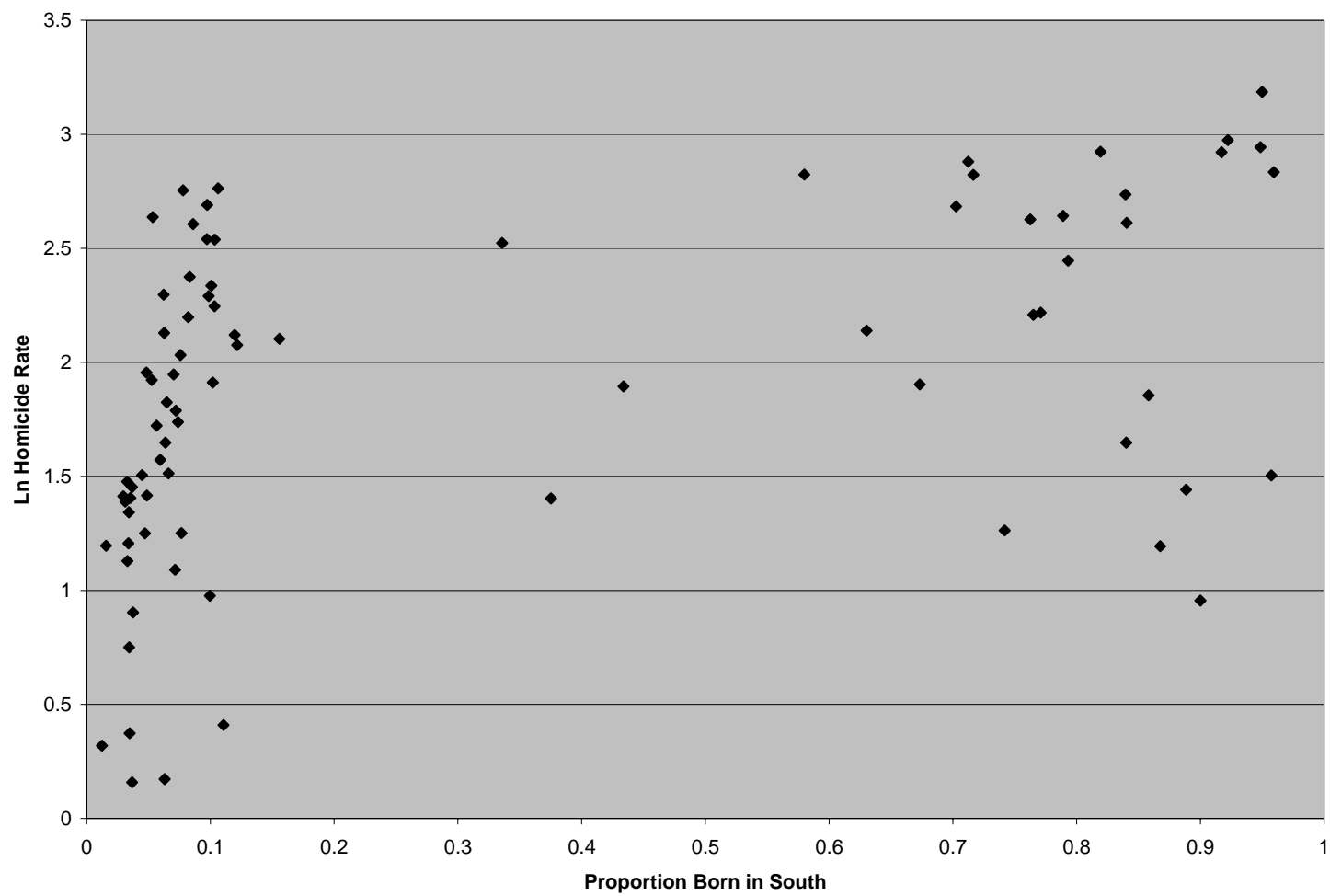
#### **4.4 A Note on Using Proportion Born in the South**

The tables in Appendix B use the alternative measure of South, a variable indicating the proportion of the population within each PSU that reported being born in the Southern region of the United States on the 1990 Census. The models presented in these tables tend to tell the same story for the total, felony and argument rates of homicide, but they do not show comparable results for the models of white homicide. This would seem to indicate that the findings presented earlier in this chapter using a Confederate South dummy variable are not particularly robust, since a different measure of South produced different results. However, the variable indicating proportion born in

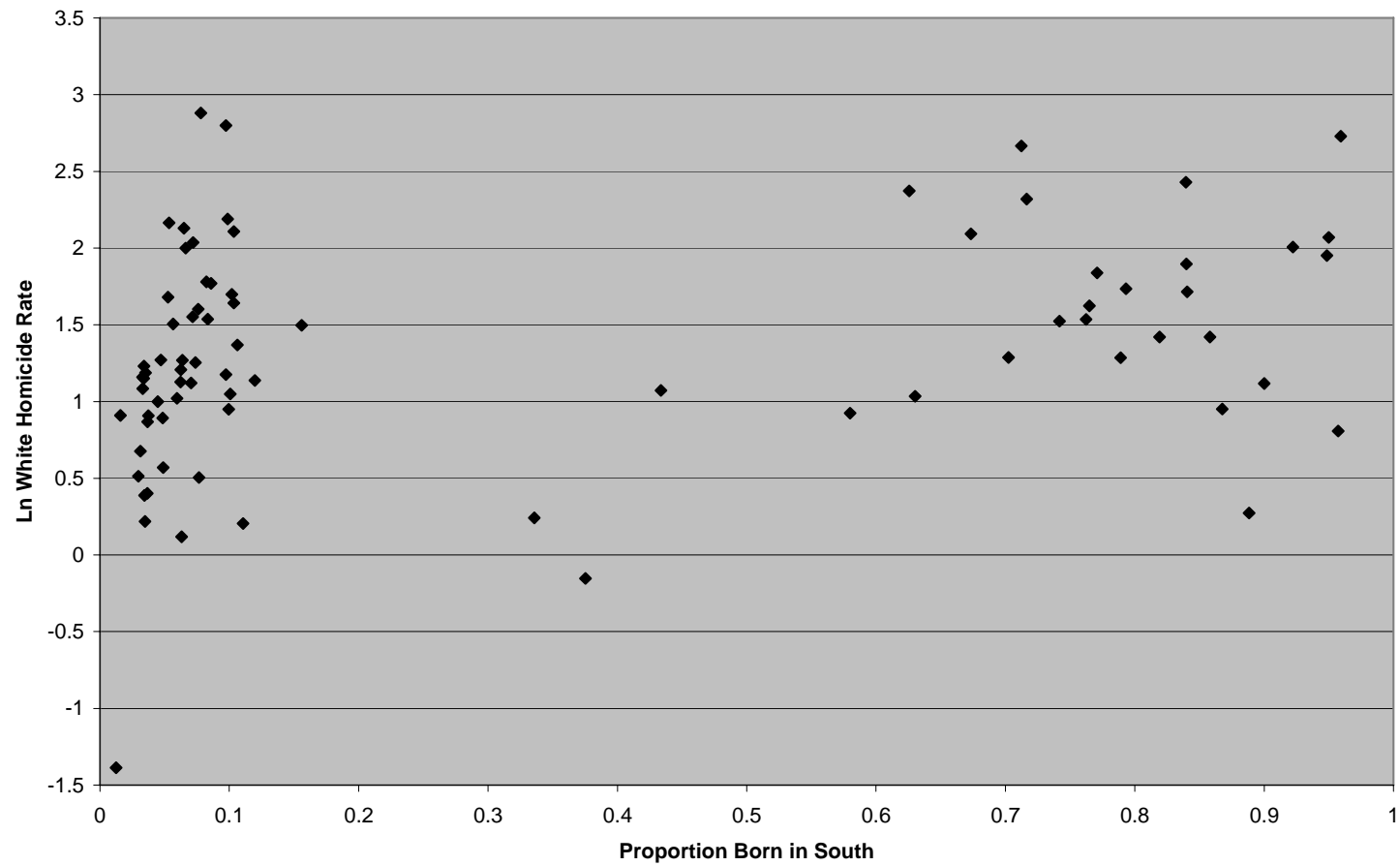
the South is not specific to whites, as this information is not available in the 1990 Census files used for this analysis. As such, it may not be the most appropriate measure of South for predicting variation in white homicide offending.

In addition, according to several scatterplots of the born in the South variable and the logged rate of homicide reveals a general positive trend, as expected from the correlation between these two variables, this is not the entire story. There is also evidence of a bimodal distribution. Figure 3 displays an example of this, plotting the logged total homicide rate by proportion born in the South. To the left of the plot, there is a great deal of variation in homicide for PSUs with very low proportions of Southern born residents. To the right, beginning at the point representing about a third of the population being born in the South, there is also a wide range of data values, though they seem to have a higher minimum value, and perhaps even a higher maximum value, thus contributing to a positive correlation between these two variables.

A very similar phenomenon is displayed in Figure 4 for white homicide. Again, one can infer that the overall relationship is positive, but there appears to be a bimodal distribution as there is essentially a sparse distribution in the center of the plot with a great deal of variation of the logged rate of homicide occurring on either end. One approach to such a problem would be to split the sample in some fashion, either by a cutoff value on the distribution of born in the South, or by region, essentially comparing Southern and non-Southern units of analysis. With a relatively low N in the Full and White samples used in this analysis, this is simply not feasible. Therefore, the use of a Confederate dummy variable is the best approach given the limitations of the data.



**Figure 3. Logged Homicide Rate by Proportion Born in the South.**



**Figure 4. Logged White Homicide Rate by Proportion Born in the South.**

#### **4.5 Negative Binomial Results**

In recent years, a trend of using the Poisson-based regression in the analysis of homicide data has been established following Osgood's (2000) treatise on the method and its utility in examining aggregate crime data. With that in mind, a series of Negative Binomial regression models, equivalent to the WLS models presented earlier in the Chapter, have been estimated and included in Appendix C. These models predict full 7-year counts of the six measures of homicide (total, argument, felony, white offender, white felony and white argument). The estimation procedures used to produce counts of homicide from the Supplementary Homicide Reports (SHR) occasionally produce non-integers due to the weighting technique required to deal with missing data (Fox 2005). Since interger dependent variables are required for the Negative Binomial procedure, these counts were rounded to the nearest interger.

The results of this analysis follows the same basic pattern as the WLS regression models, with a notable exception for the full models predicting argument-based and white argument homicides. For the models predicting argument homicides (Table C6), there is a significant and positive effect associated with the measure of conservative Protestants, but there is no significant effect for the Extreme Violent Index in Model 3 or 4. The white argument models indicate no significant effect for the Extreme Violent Index or the conservative Protestant measure, even though both are significant in the previous model. However, according to the z-score test used earlier, the reduction in their coefficients between Models 3 and 4 is not significant. The reduction in the Extreme Violent Index corresponded to a z-score of .499, and the reduction in the conservative Protestant measure corresponded to a z-score of .716.

#### **4.6 Summary of the Multivariate Results**

In summary, the findings of the multivariate analysis are partially in line with the expectations outlined at the end of Chapter 2. First of all, there are differences in some of the measures of homicide between Confederate and non-Confederate PSUs. For example, among the total rate of homicide and the rate of argument homicide there was a distinct difference in Confederate and non-Confederate homicide, but this relationship did not remain significant across all models. The introduction of the full sets of structural and cultural variables in the final model for total homicide rendered the Confederate effect insignificant. Likewise, the initial model for white argument homicide showed a significant and positive difference between Confederate and non-Confederate units. Again this effect was diminished in later models with the inclusion of relevant controls. The models predicting felony homicide tell a slightly different story. The full model for total felony homicide shows a significant negative relationship with Confederate South, net of controls.

Secondly, the results for the Extreme Violent Index are in line with the expectations regarding the relationship between violent attitudes and homicide. The models for total homicide including the Extreme Violent Index show a significant and positive relationship between the two. The same can be said for the full models predicting felony homicide and argument homicide. Within the models predicting white homicide, there is only a significant relationship for the models predicting white argument homicide, again in the expected direction. The Common Violent Index does not perform as consistently, only showing a significant effect for the full model

predicting felony homicide (Table 20), but as I have stated earlier, this factor is not necessarily an indicator of subcultural attitudes in itself, despite its previous use as such.

Finally, the results of the tests for theoretically implied interactions indicate no real support for the expectations. There are significant negative interactions in relation to felony homicide, which would indicate that the effects of Extreme Violent Attitudes within the Confederate South (and where there are higher proportions of conservative Protestants) are not facilitating an increase in instrumental forms of violence. The interaction models for total and white argument homicide show no significant interactions. Thus there is no evidence to offer indicating that Extreme Violent attitudes would have a greater effect within the former Confederate South, or that the presence of conservative Protestants amplifies their effect on violent behavior.

The next chapter concludes the dissertation by first revisiting the theoretical developments and expectations. The results from the various analyses will also be discussed in relation to the expectations set in Chapter 2 as well as in relation to the general theory of the Southern subculture of violence and past studies in this area. Chapter 5 will then conclude with a discussion of the limitations of this study as well as several directions for future research to facilitate the ongoing study of this topic.

## **CHAPTER 5: DISCUSSION AND CONCLUSIONS**

### **5.1 Summary of the Background Literature**

Previous studies on the Southern subculture of violence have been organized in two areas: macro and micro. The macro level studies have a general pattern in that they attempt to explain the South effect, in a regression context, with the common structural correlates of homicide. The general logic behind the macro level studies is to introduce a Southern dummy variable in a regression equation usually predicting homicide and add relevant controls for structural disadvantage and population composition. If the effect of the Southern dummy variable remains in the model including the controls, it is assumed there is an unmeasured cultural variable influencing rates of homicide in the South. Thus, a subculture of violence may be operating in the South.

There are a few disagreements, especially early on, among the macro level studies, which may have contributed to inconsistencies in terms of evidence for a subcultural effect. These studies disagree on the most appropriate measures of structural disadvantage, with Loftin and Hill (1974) criticizing early works (Hackney 1969; Gastil 1971) which set the foundations of the Southern subculture of violence thesis. Another disagreement of sorts has to do with the most appropriate measure of South. This is an important issue among the macro level work, since this is their only (albeit indirect) measure of culture. Several approaches have been used, including the use of a dummy variable for location in a former Confederate state (Hackney 1969, Messner 1983), a dummy variable indicating the Census Bureau's version of South, and the proportion of the population born in the South (Blau and Golden 1986).



Finally, there is the issue of the most relevant dependent variable. While many studies choose to examine a rate of total homicide when testing assumptions drawn from the theory on the Southern subculture of violence, theory suggests that specific types of homicide may be more important. For this reason, some researchers have chosen to focus on rates of primary homicide (Bankston, et. al. 1990; Rice and Goldman, 1994) or expressive homicide (including homicides resulting from arguments; see Smith and Parker 1980). Race has also become an important concept in Southern subcultural theory as of late, with the work of Nisbett and Cohen (1996) on the culture of honor, leading some macro level researchers to focus on rates of white offender homicide (Lee, Hayes and Thomas 2006; Lee, Bankston, Hayes and Thomas 2006).

While the research has improved over the years with the debate over the measure of South and the most appropriate measure of homicide, there is still one limitation of the macro level studies. There has been no direct measure of the cultural attitudes, which theory implies as necessary in providing evidence for a subculture, in the macro level studies reviewed to date. The recent theoretical statement made by Nisbett and Cohen (1996) implies that the heightened levels of violence observed in the South are due in part to its history (i.e., settlement by Scotch Irish, and the lack of formal law enforcement inherent in a rural or frontier area) but are also due to cultural values held by a specific group of people in the present (Southern whites) calling forth the use of violence in specific situations. So, in other words, cultural attitudes condoning violence, which seem to be generally held by Southern whites, are the reason for the heightened rate of violence observed at the macro level. Again, Nisbett and Cohen's (1996) theory has not been

directly tested at the macro level since measures of cultural attitudes at that level are difficult to acquire.

Micro level studies, however, provide some interesting findings regarding cultural attitudes among Southerners and even Southern whites. Hayes and Lee (2005), for example, provide some support for the culture of honor theory. Using the HIT series from the GSS as a series of measures of violent attitudes, they find that Southern white rural males are more likely to hold violent attitudes, given relevant controls, but this heightened approval was most noted when overall approval of a violent response to the particular scenario reflected in the GSS question is very low (HITDRUNK and HITMARCH specifically). This, in essence, is some evidence for a subculture, even though past researchers insist that overall approval may not be the issue, so long as the violent response is to a scenario that is relevant to the theory (see Ellison and McCall 1989; Ellison 1991). While the culture of honor theory does imply a defensive use of violence, it is not certain that all individuals would see the use of violence in these situations as defensive. Therefore, incidents perceived as relatively minor threats or insults to the general public may not be seen the same to an individual operating in the culture of honor. Instead these incidents may be viewed as necessitating a quick and violent response. Therefore, if the scenarios (HITDRUNK and HITMARCH for example) are not generally approved of, and they still present some reasonable face validity in terms of the arguments of the subculture of violence theory, they may be seen as relevant indicators of violent subcultural values.

## 5.2 Summary of Expectations

This dissertation attempts to offer a major improvement on past research dealing with subcultural explanations of Southern violence by introducing aggregated survey data on attitudes toward violence from the GSS as a variable in a macro level model predicting homicide. I have argued in several sections previous to this chapter that this approach provides a straightforward test of the Southern subculture of violence at the macro level while also controlling for the common structural correlates of homicide. It also provides a test of some of the assumptions based on the culture of honor theory, by using white homicide and argument based homicide as dependent variables, and aggregate measures of cultural attitudes as independent variables.

Before revisiting the results described in Chapter 4, it is important to restate the main expectations. Given the past research and theoretical statements highlighted in Chapter 2, I constructed the following hypotheses.

Hypothesis 1: The greater the tolerance of violence, the higher the homicide rate.

This will be especially true for white offender homicide and white argument homicide.

Hypothesis 2: The measure(s) of aggregate cultural attitudes will reduce any effect of Confederate South on homicide to insignificance.

Hypothesis 3: The effect of aggregate cultural attitudes on homicide will be greater within the former Confederate South.

Hypothesis 4: The effect of cultural attitudes on homicide will be greater where there are higher proportions of conservative Protestants.

The analytical methods used in this dissertation to test the aforementioned hypotheses began with a thorough descriptive analysis, followed by an examination of bivariate correlations and the construction of indices using common Principal Components analysis techniques, followed by a series of multivariate models using WLS regression techniques to account for the variability of the within-PSU respondents to the GSS questions.

### **5.3 Major Findings**

Overall, there were several major findings in this study that tend to support the hypotheses presented as well as the general theory of a subculture of violence. There was some support for a hypothesized relationship between Extreme Violent Attitudes and theoretically relevant measures of homicide. The measures of violence, along with the relevant structural and control variables account for the effect of a Confederate South dummy variable, but in many cases both the structural and cultural groups of variables accounted for the Confederate South effect separately. This provides evidence that a combination of structural and cultural independent variables may be driving the elevated rates of homicide in the South. These findings are summarized in Table 29 and are discussed in more detail in the following paragraphs.

There was strong support for Hypothesis 1, in that bivariate correlations revealed a positive and significant relationship between the argument homicide rate and the measure of Extreme Violent Attitudes. This was also confirmed in the multivariate analysis for both the full and white samples. When controls were taken into account, using the WLS regression models, the relationship remained for the argument homicide dependent variable in both samples. In other words, regardless of structural

disadvantage, ethnic heterogeneity, population size, and other relevant controls, PSUs with a higher level of aggregate acceptance of Extreme violence had higher argument homicide rates. In addition, there was an assumption that the measures of violent attitudes would have a significant effect in models predicting white homicide as well. While the models predicting white offender homicide and white felony homicide did not present such a finding, the models for the most applicable variable in this series, white argument homicide, showed a significant effect for the Extreme Violent Attitudes measure. While this does not provide definitive evidence for a Southern subculture of violence, it does indicate that in general, areas with some underlying culture supportive of violence in a wide range of circumstances also have higher homicide rates.

Since Hackney (1969) and Gastil (1971) began testing the assertions of the Southern subculture of violence theory at the macro level there have been several disagreements about what the subculture of violence actually entails, or if it even exists. There have been theoretical revisions that suggest it is primarily used for defense, and thus it will surface in individual level attitudes toward using violence for defense (Ellison, 1991). However, the weakness of this argument is in that it is unclear which scenarios Southerners themselves view as defensive and which they clearly agree are not defensive situations.

While the traditional defensive scenarios from the GSS were used in this study, there was no evidence of a significant effect with those scenarios (which were included in the Common Violent Index) once common controls were taken into account. This may be seen as an inconsistency with past research (Ellison and McCall 1989; Ellison 1991), but when considering the arguments made by Hayes and Lee (2005), it can be seen as

**Table 29. Summary of Findings in Relation to the Main Hypotheses.**

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<p><u>Hypothesis 1:</u> The greater the tolerance of violence, the higher the homicide rate. This will be especially true for white offender homicide and white argument homicide.</p>	<p>The findings from the examination of the bivariate correlations show significant positive correlations between total argument homicide and the Extreme Violent Index. These findings are repeated for the white argument rate of homicide.</p> <p>The relationship remains positive and significant in the full Weighted Least Squares models predicting total argument and white argument homicide.</p>
<p><u>Hypothesis 2:</u> The measure of aggregate cultural attitudes will reduce any effect of South on homicide to insignificance.</p>	<p>It appears that several other controls have stronger effects on the two measures of argument homicide. For the total argument rate, there was no effect of a Confederate dummy variable after controls for disadvantage were entered. For white argument homicide the effect of a Confederate dummy was reduced with controls for disadvantage and ethnic heterogeneity. These controls did not significantly affect the Extreme Violent Index in either set of models.</p>
<p><u>Hypothesis 3:</u> The effect of aggregate cultural attitudes on homicide will be greater within the former Confederate South.</p>	<p>There was no significant positive interaction observed for the Confederate South measure and the Extreme Violent Index for any of the dependent variables. There was however a significant and negative interaction for measures of felony homicide.</p>
<p><u>Hypothesis 4:</u> The effect of cultural attitudes on homicide will be greater where there are higher proportions of conservative Protestants.</p>	<p>There was a significant negative interaction term between Conservative Protestant and Extreme Violence for the felony homicide rate, indicating that the effect of Extreme Violence on felony homicide is reduced where there are higher percentages of Conservative Protestants.</p>

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evidence of a subculture of violence. Subcultures should not necessarily be set apart from the dominant culture by using indicators of violent attitudes with relatively high levels of approval. Instead, they should appear the most different from the dominant culture when examining indicators of violent attitudes that generally have low levels of approval. In short, there are two important points to make when considering the findings regarding Hypothesis 1: 1) Labeling attitudes as defensive becomes problematic without a clear idea of what individuals within a subculture consider defensive, thus it may be desirable to avoid such labels, and 2) The measures of past “defensive” attitudes exhibit such high levels of approval that it becomes difficult to view them as valid indicators of a subculture. When considering these two points, the findings in relation to Hypothesis 1 can be seen as less of an inconsistency when compared to past research on attitudes toward violence among Southerners.

The findings related to Hypothesis 2, which provide a classic test of the Southern subculture of violence, are not as clear. Generally, when introducing the set of control variables in a series of WLS regression models, the effect of the Confederate dummy variable was reduced to insignificance. When accounting for structural disadvantage and ethnic heterogeneity in particular, the Confederate dummy was reduced to insignificance in nearly every case, with exceptions for total and felony homicide rates among the full sample. For the total rate of homicide, the Confederate dummy variable was only accounted for when the two violence factors and the variable for Conservative Protestant adherents was introduced in Model 3. For felony homicide, the effect of the Confederate dummy went from a positive, but insignificant relationship, to a negative and significant relationship in Models 3 and 4. As I have stated in the previous chapter, this is not

necessarily counterintuitive when one considers the previous theoretical discussion since it is mostly agreed upon that the Southern subculture of violence relates primarily to argument-based or expressive homicides and not felony-based homicides. However, it is important to state again that there is little evidence here of an exclusive Southern subculture of violence, since in many cases structure also accounted for differences between the former Confederate South and other areas, and in a few cases, there was no baseline effect for the former Confederate South. Instead, it seems that there may be a more general subculture of violence operating over a broader area.

For Hypotheses 3 and 4, several full models including interaction effects and appropriately centered component variables were specified. There were no significant positive interactions observed for Confederate South and the Extreme Violent Index, indicating that these values are not necessarily stronger in the former Confederate South. There was, however, a significant negative interaction observed for the models predicting felony homicide in both samples, indicating that the effects of Extreme Violent Attitudes on felony rates of homicide is weaker. This provides additional evidence that the so-called Southern subculture of violence is not necessarily confined to the South, even though it may have been previously.

In relation to Hypothesis 4, regarding the possible moderation of Extreme Violent Attitudes by presence of Conservative Protestant adherents, there was not a significant interaction for the models predicting argument homicide. For the models predicting felony homicide, however, there was a significant and negative interaction. One possible interpretation of this coefficient is that where there are higher levels of Conservative Protestants, the effect of Extreme Violent Attitudes on felony homicide is significantly



weaker. Again, in the context of argument homicide, there is no evidence of a significant moderating effect in either direction. This finding is in opposition to that of previous research by Ellison, Burr and McCall (2001) and calls into question their theorized relationship between conservative Protestantism and violent behavior. However, this seems supportive of the moral communities thesis (Stark 1996).

#### **5.4 Limitations of the Study**

In light of these findings, several limitations must be addressed. First of all, the GSS data are limited in that there are very low numbers of minority respondents. This does not allow for the comparison of models predicting rates of white homicide to those of African American and perhaps even Hispanic groups, which would be important to examine since past hypotheses regarding subcultural theory have stated that there may be one operating among African Americans (Wolfgang and Ferracuti 1967). Furthermore, recent writings by Thomas Sowell (2005) theorize that the elevated rates of African American homicide in many inner city neighborhoods are a by-product of exposure to the culture of white Southerners. Sowell argues that past generations of African Americans were exposed to the values of white Southerners while living in the South and these values were taken along when African Americans migrated out of the South in the decades following the Civil War (Sowell 2005).

Secondly, the relatively small sample size hampers the ability to make comparisons between Confederate and non-Confederate PSUs aside from the use of a dummy variable in the regression models. As stated earlier, this does not allow for the proper use of a percent Southern born variable (due to the bimodal nature of its

distribution), which has been used in previous and recent studies on the Southern subculture of violence.

The sample size also hampers the ability to study rural areas independently. The criteria for selecting PSUs for aggregating survey responses (a minimum of 15 respondents within a PSU) deemed several rural counties within the GSS unusable for the purposes of this study. Recent work on the culture of honor (Nisbett and Cohen 1996) has called attention to the rural context as an important factor in the formation and the continuation of culture of honor (or subculture of violence in more common terms to sociology and criminology). There is an evident need for a focus on rural crime, since the data tend to suggest that, generally, rural crime rates are much more stable than those in urban areas and have not benefited from the swift declines over the mid-to-late 1990's (see Lee and Hayes, 2005).

Furthermore, recent studies indicate two important conclusions regarding rural areas and South / non-South differences. First, rural areas outside the South with a high level of Southern-born residents suffer from elevated homicide rates. One possible conclusion that can be drawn from this finding is that Southerners may be carrying part of their culture with them when moving to other areas, and that this culture may be more apt to take hold in rural areas (Lee, Bankston, Hayes and Thomas 2006). Second, the effects of common structural measures of disadvantage do not seem to be significant for Southern rural counties, and only certain measures of structure are significant for non-Southern rural counties (i.e., female-headed households, High School dropouts, and level of median income). This would indicate the possibility of something other than structural disadvantage operating to influence the variation of homicide in rural areas, possibly

culture (Lee, Hayes and Thomas 2006). These studies together reinforce the importance of the rural context in discussing regional differences in violent crime. However, this is an issue for future research as the data for this study does not lend itself to such comparisons.

Finally, there is the possibility of a reciprocal effect among the dependent and independent variables. In short, it may be that the macro-unit context in part influences individual attitudes toward violence. Areas with high rates of poverty, unemployment and other forms of structural disadvantage may produce increased attitudes toward violence, thus calling for the use of violent attitudes as an endogenous variable. It may also be the case that high rates of violent crime in a particular area legitimize attitudes toward extreme violence, again calling for violent attitudes as a dependent variable.

While these alternate scenarios are both plausible, the data presented do not provide the necessary information to construct a valid test of either argument. Both arguments are in a sense derived from the work of Elijah Anderson (1999) and are most appropriate when applied to the context of the neighborhood, rather than a large conglomerate of metropolitan counties, or rural counties for that matter. Setting the debates and problems in defining neighborhoods aside for a moment, the limitations of the General Social Survey data do not allow for the identification of the specific neighborhood of a particular respondent. Even if the necessary information were available in the present GSS dataset, the sample size would also limit the ability to construct meaningful inferences regarding neighborhood effects.

One final issue that is beyond the scope of this study is whether the Southern subculture of violence exists in the present, or whether it is significantly weaker than in

the past. The analysis of the data for this study tends to lead one to the conclusion that there is an effect of cultural attitudes on homicide, albeit a weak one, thus supporting the notion that the subculture of violence was active as recently as the late 1980s and the early 1990s. However, it is not possible to deduce whether the subculture is waning over time, or if it is still present in the South.

## **5.5 Directions for Future Research**

### **5.5.1 Contextual Effects on Individual Attitudes**

The nature of the data used in this study lends itself to further inquiry in several areas. First of all, the combination of survey data from the GSS and macro-level data from the United States Census and other sources opens the door for a true multi-level study, but one with a different dependent variable. One could examine the effects of individual and macro-level circumstances on individual attitudes supportive of extreme violence using Hierarchical Linear Modeling (HLM). This approach will provide some necessary examinations of how individual attitudes toward violence vary across contextual circumstances and may be appropriate in addressing the possibility of a reciprocal effect (that is, high levels of violent crime possibly influencing individual attitudes).

### **5.5.2 Gun Ownership in the South**

One of the major issues tackled at the micro level is the link between violence and gun ownership. Several early studies of Southern violence including Hackney (1969) and Gastil (1971) indicate that one of the possible reasons for a higher rate of lethal violence in the South may be due to a higher percentage of gun owners. Indeed, John Shelton Reed (1971) buttresses this argument, finding that gun ownership is a bit higher among

Southerners when comparing them to non-Southerners using public opinion data. It is also interesting that this does not seem to be tied to higher levels of hunting in the South, as Southerners who report that they do not hunt seem more likely to own guns when compared to non-hunters from other regions.

It seems that instead of sport, higher levels of gun ownership in the South may serve some type of protective function. Findings here indicate that gun ownership seems to rise as a response to violent crime rates (Kleck 1979; Lizotte and Bordura 1980). This finding is commonly used as evidence of a subculture approving of owning and using guns as a protection against criminals. Further support for protective gun ownership comes from the relation of gun ownership with approval of defensive violence (Dixon and Lizotte 1987) and the higher rate of gun ownership for protection among Southern females (Bankston, et. al. 1990).

The GSS data contain several questions that measure gun ownership, which can be used as aggregated indicators, offering an estimate of gun ownership rates by PSU. However, these variables are often not available in the same years and on the same ballots as the HIT series used here. Therefore, a separate study could focus on gun ownership from the GSS, but would not necessarily be able to include measures using the HIT questions in the same model. The variables examining gun ownership could be used as an independent variable in a regression model similar to those in Chapter 4, which would allow for an evaluation of the effect of gun ownership on lethal violence between Confederate and non-Confederate PSU's. This is a question that is often avoided by macro level researchers given the lack of available aggregate measures of gun ownership.

### **5.5.3 Qualitative Interviews**

Finally, there is need for more focused research on the types of scenarios that lead to violence in Southern culture as well as whether these scenarios are perceived as defensive by Southern natives. One possible method for collecting these data is semi-structured interviews with Southern rural residents. Using a method similar to Swidler's (2001) in her study of the cultural concept of love, Southern rural dwellers could be questioned regarding such cultural concepts as honor, in order to carefully examine what this concept means to a Southerner and how it is engaged in their daily lives. Swidler's (1986; also Swidler 2001) tool-kit analogy could also be of use here, as these interviews would likely shed light on the specific situations that call for a violent response, and why violence is the particular cultural tool used in those situations.

This approach would not only provide a detailed account of specific situations that are likely to lead to violence, but it would also likely provide information on why these situations are culturally expected to result in violence and how these situations are later defined (whether they are defensive responses) by Southerners. This method could also be used to address issues regarding the rural nature of the subculture of violence, which was not possible in this dissertation due to data limitations. The qualitative semi-structured interview method would provide necessary information regarding the current state of the subculture of violence, which would likely be an enlightening alternative to relying on past theoretical statements related to an ever-changing Southern landscape.

### **5.6 Concluding Remarks**

This study has improved on past research of the Southern subculture of violence by introducing a macro level measure of cultural attitudes into a model predicting rates of

homicide. Despite the limitations of the GSS data used to construct the cultural attitudes and the limitations of the sample size, there is some evidence for a measure of Extreme Violent attitudes being significantly related to a relevant measure of homicide, with controls for structural disadvantage, population size, ethnic heterogeneity and age structure. However, the evidence is not definitive, given several caveats related to the data and methods. Given these limitations, the findings tend to suggest a more general subcultural phenomenon, one not necessarily confined to the South.

Further research is needed in several areas to continue the resurgence of theory on the Southern subculture of violence. The process of aggregating individual level survey responses to the macro level should be continued in order to test competing theories in a familiar framework, but there are important questions that this approach may not be able to address. More research on violence in rural areas is needed in order to explore the relation between Southern culture and the rural environment, as well as the cultural processes leading to and maintaining the acceptance of violence in a broad range of situations. These specific research areas may benefit from a more qualitative approach.

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## APPENDIX A: LIST OF CONSERVATIVE PROTESTANT DENOMINATIONS

**Table A1. List of Conservative Protestant Denominations Used to Construct a Measure of Conservative Protestant Adherents within PSU.**

Advent Christian Church	Church of the Brethren	Lutheran Church–Missouri Synod
Apostolic Christian Church (Nazarene)	Church of the Lutheran Brethren of America	Missionary Church
Assemblies of God	Church of the Lutheran Confession	North American Baptist Conference
Baptist General Conference	Church of the Nazarene	Open Bible Standard Churches
Baptist Missionary Association of America	Churches of Christ	Pentecostal Holiness Church, Inc.
Berean Fundamental Church	Conservative Baptist Association of America	Christian Brethren
Bible Church of Christ, Inc.	Conservative Congregational Christian Conference	Primitive Advent Christian Church
Brethren Church (Ohio)	Estonian Evangelical Lutheran Church	Primitive Methodist Church
Brethren in Christ Church	Evangelical Congregational Church	Salvation Army
Christian and Missionary Alliance	Evangelical Free Church of America	Separate Baptists in Christ
Christian Churches and Churches of Christ	Evangelical Methodist Church	7th-Day Adventists
Church of God, General Conference	Fire Baptized Holiness Church	7th-Day Baptist General Conference
Church of God (Anderson, IN)	Free Lutheran Congregations	Southern Baptist Convention
Church of God (Cleveland, TN)	Free Methodist Church of North America	Wisconsin Evangelical Lutheran Synod
Church of God (7th Day, Denver, CO)	International Church of Foursquare Gospel	
Church of God in Christ	Latvian Evangelical Lutheran Church in America	

## APPENDIX B: ALTERNATE ANALYSIS WITH PROPORTION BORN IN THE CENSUS SOUTH

**Table B1. Weighted Least Squares Regression Models Predicting Total Homicide with Proportion Born in the Census South Variable and Controls (N=80).**

	Model 1	Model 2	Model 3	Model 4
<b>Independent Variables</b>				
P Born in South	1.165** (.108)	.461** (.033)	.772** (.158)	.340 (.212)
Disadvantage Index	---	.101 (.049)	---	.097 (.046)
Blau Index	---	2.427** (.330)	---	2.345** (.302)
Extreme Violent Index	---	---	.083 (.084)	.053 (.036)
Common Violent Index	---	---	-.070 (.022)	-.024 (.030)
P Conservative Protestant	---	---	1.119* (.406)	.292 (.704)
<b>Controls</b>				
Logged Population	.224** (.046)	.114 (.058)	.244* (.058)	.125 (.066)
P Age 15-24	-3.358* (1.053)	-4.142* (1.568)	-2.660* (1.026)	-3.790* (1.611)
Constant	-.873 (.631)	.230 (.871)	-1.276 (.805)	.055 (.977)
Model R-Square	.534	.779	.570	.785
F	29.00**	52.21**	16.17**	32.39**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.



**Table B2. Weighted Least Squares Regression Models Predicting Felony Homicide with Proportion Born in the Census South Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
P Born in South	.663* (.175)	-.031 (.191)	.030 (.209)	-.307 (.269)
Disadvantage Index	---	-.175 (.176)	---	-.200 (.192)
Blau Index	---	3.617** (.572)	---	3.393** (.690)
Extreme Violent Index	---	---	.139 (.089)	.102 (.053)
Common Violent Index	---	---	-.152 (.085)	-.130* (.055)
P Conservative Protestant	---	---	1.818** (.228)	.959 (.514)
<b>Controls</b>				
Logged Population	.321** (.051)	.121 (.085)	.354** (.053)	.148 (.097)
P Age 15-24	2.117 (2.475)	.780 (2.479)	3.414 (2.455)	1.832 (2.507)
Constant	-4.199* (1.044)	-2.173 (1.228)	-4.884** (1.081)	-2.678 (1.306)
Model R-Square	.397	.572	.463	.603
F	16.69**	19.77**	10.48**	13.46**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table B3. Weighted Least Squares Regression Models Predicting Argument Homicide with Proportion Born in the Census South Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
P Born in South	1.530** (.214)	.648** (.140)	1.048* (.241)	.482** (.091)
Disadvantage Index	---	.159 (.163)	---	.171 (.162)
Blau Index	---	2.895* (.799)	---	2.824* (.774)
Extreme Violent Index	---	---	.083 (.076)	.047** (.008)
Common Violent Index	---	---	-.014 (.054)	.048 (.058)
P Conservative Protestant	---	---	1.394 (.709)	.344 (.452)
<b>Controls</b>				
Logged Population	.208* (.084)	.081 (.107)	.232* (.078)	.094 (.100)
P Age 15-24	.269 (1.607)	-.646 (2.358)	.783 (1.713)	-.586 (2.525)
Constant	-2.323 (1.075)	-1.053 (1.387)	-2.757* (.957)	-1.198 (1.335)
Model R-Square	.376	.594	.397	.598
F	15.28**	21.61**	8.01**	13.20**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table B4. Weighted Least Squares Regression Models Predicting White Offender Homicide with Proportion Born in the Census South Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
P Born in South	.694 (.397)	-.005 (.392)	.104 (.563)	-.342 (.461)
White Disadvantage Index	---	.133* (.052)	---	.140 (.075)
Blau Index	---	2.745** (.575)	---	2.551* (.675)
Extreme Violent Index	---	---	.114 (.076)	.035 (.066)
Common Violent Index	---	---	-.073 (.054)	-.036 (.049)
P Conservative Protestant	---	---	1.975 (.937)	1.440 (.939)
<b>Controls</b>				
Logged White Population	.139 (.063)	.038 (.072)	.177* (.056)	.073 (.090)
P Whites Age 15-24	-.429 (1.215)	-.543 (1.258)	.379 (1.426)	-.101 (1.525)
Constant	-.587 (1.009)	.207 (1.192)	-1.262 (.956)	-.345 (1.492)
Model R-Square	.169	.433	.236	.460
F	5.09**	11.15**	3.71**	7.44**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table B5. Weighted Least Squares Regression Models Predicting White Felony Homicide with Proportion Born in the Census South Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
P Born in South	.031 (.319)	-.592 (.356)	-.392 (.447)	-.768 (.401)
White Disadvantage Index	---	-.060 (.059)	---	-.045 (.098)
Blau Index	---	2.632* (.830)	---	2.431* (.819)
Extreme Violent Index	---	---	-.033 (.149)	-.046 (.129)
Common Violent Index	---	---	-.127 (.132)	-.111 (.119)
P Conservative Protestant	---	---	2.207 (.949)	1.424 (.853)
<b>Controls</b>				
Logged White Population	.179** (.030)	.041 (.098)	.215** (.033)	.078 (.113)
P Whites Age 15-24	2.366 (2.020)	2.346 (1.939)	3.061 (1.911)	2.823 (1.938)
Constant	-2.740* (.859)	-1.479 (1.468)	-3.479* (.924)	-2.105 (1.740)
Model R-Square	.189	.394	.268	.436
F	5.82**	9.50**	4.40**	6.75**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

**Table B6. Weighted Least Squares Regression Models Predicting White Argument Homicide with Proportion Born in the Census South Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
P Born in South	1.411* (.378)	.545 (.377)	.996 (.597)	.412 (.446)
White Disadvantage Index	---	.186* (.065)	---	.179* (.065)
Blau Index	---	3.381** (.696)	---	3.350* (.808)
Extreme Violent Index	---	---	.158 (.097)	.057 (.067)
Common Violent Index	---	---	-.025 (.090)	.023 (.048)
P Conservative Protestant	---	---	.923 (1.550)	.213 (1.351)
<b>Controls</b>				
Logged White Population	.130 (.089)	.010 (.074)	.152 (.070)	.015 (.071)
P Whites Age 15-24	-1.430 (1.072)	-1.582 (1.236)	-.863 (1.190)	-1.487 (1.422)
Constant	-1.305 (1.249)	-.385 (1.154)	-1.653 (.972)	-.435 (1.207)
Model R-Square	.280	.561	.302	.564
F	9.70**	18.67**	5.19**	11.32**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: Coefficients are unstandardized, with the standard errors appearing in parentheses. These models are also weighted by the within-PSU N for the HIT questions and clustered by region using STATA's cluster function.

## APPENDIX C: ALTERNATE ANALYSIS USING NEGATIVE BINOMIAL REGRESSION

**Table C1. Negative Binomial Regression Models Predicting Total Homicide with Confederate South Dummy Variable and Controls (N=80).**

	Model 1	Model 2	Model 3	Model 4
<b>Independent Variables</b>				
Confederate South	.849** (.133)	.270** (.080)	.334** (.036)	.068 (.158)
Disadvantage Index	---	.098* (.053)	---	.087* (.044)
Blau Index	---	2.856** (.393)	---	2.651** (.315)
Extreme Violent Index	---	---	.094** (.032)	.065** (.017)
Common Violent Index	---	---	-.056** (.013)	-.006 (.020)
P Conservative Protestant	---	---	2.186** (.542)	.961 (.712)
<b>Controls</b>				
Logged Population Size	.198** (.069)	.096* (.051)	.245** (.071)	.126** (.054)
P Age 15-24	-4.140** (.746)	-4.907** (1.959)	-.3141** (1.014)	-4.590* (2.074)
Constant	-9.799** (.918)	-9.029** (.779)	-10.744** (.975)	-9.489** (.813)
Log Likelihood	-486.615	-449.787	-480.064	-445.844
Pseudo R-Square	.046	.118	.059	.126
Model Chi-Square	47.08**	120.74**	60.19**	128.63**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.

**Table C2. Negative Binomial Regression Models Predicting Felony Homicide with Confederate South Dummy Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate South	.564** (.133)	-.249 (.223)	-.333** (.068)	-.696** (.157)
Disadvantage Index	---	-.041 (.217)	---	-.193 (.249)
Blau Index	---	4.511** (.943)	---	4.325** (.903)
Extreme Violent Index	---	---	.246** (.050)	.174** (.037)
Common Violent Index	---	---	-.195** (.069)	-.184** (.053)
P Conservative Protestant	---	---	3.194** (.504)	1.931** (.399)
<b>Controls</b>				
Logged Population Size	.266** (.055)	.070 (.090)	.367** (.085)	.131 (.097)
P Age 15-24	-1.176 (2.694)	-.254 (4.016)	3.075 (3.464)	2.523 (4.439)
Constant	-12.338** (.915)	-11.004** (1.547)	-14.560** (1.575)	-12.376** (1.645)
Log Likelihood	-409.859	-393.524	-400.837	-386.557
Pseudo R-Square	.024	.063	.045	.079
Model Chi-Square	19.97**	52.64**	38.01**	66.57**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.

**Table C3. Negative Binomial Regression Models Predicting Argument Homicide with Confederate South Dummy Variable and Controls (N=80).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate South	1.059** (.285)	.142 (.130)	.164 (.327)	-.269 (.191)
Disadvantage Index	---	.106 (.152)	---	.069 (.149)
Blau Index	---	4.118** (.723)	---	4.029** (.708)
Extreme Violent Index	---	---	.055 (.074)	.025 (.027)
Common Violent Index	---	---	-.053 (.069)	.035 (.062)
P Conservative Protestant	---	---	3.755** (1.010)	1.983** (.809)
<b>Controls</b>				
Logged Population Size	.141 (.114)	-.020 (.091)	.203* (.086)	.008 (.091)
P Age 15-24	-2.507 (1.701)	-3.194 (3.887)	-.770 (2.898)	-2.607 (4.438)
Constant	-10.245** (1.472)	-9.010** (1.371)	-11.615** (1.143)	-9.608** (1.484)
Log Likelihood	-440.131	-417.983	-435.590	-415.827
Pseudo R-Square	.025	.074	.035	.079
Model Chi-Square	22.54**	66.83**	31.62**	71.14**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.



**Table C4. Negative Binomial Regression Models Predicting White Offender Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate South	.489 (.300)	-.060 (.202)	.016 (.270)	-.311* (.171)
White Disadvantage Index	---	.090* (.047)	---	.085 (.088)
Blau Index	---	2.886** (.476)	---	2.694** (.646)
Extreme Violent Index	---	---	.114 (.080)	.069 (.115)
Common Violent Index	---	---	-.106* (.062)	-.057 (.042)
P Conservative Protestant	---	---	2.192 (.516)	1.304 (.979)
<b>Controls</b>				
Logged White Population	.080 (.055)	-.017 (.051)	.129** (.042)	.020 (.094)
P Whites Age 15-24	-1.464 (1.565)	-.783 (2.097)	-.247 (2.241)	-.128 (2.486)
Constant	-9.039** (.851)	-8.583** (.974)	-10.022** (.910)	-9.219** (1.642)
Log Likelihood	-437.580	-417.389	-433.527	-414.955
Pseudo R-Square	.011	.056	.020	.062
Model Chi-Square	9.41*	49.79**	17.52**	54.66**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.

**Table C5. Negative Binomial Regression Models Predicting White Felony Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate South	.189 (.269)	-.399* (.176)	-.241 (.230)	-.591** (.172)
White Disadvantage Index	---	-.074 (.055)	---	-.098 (.085)
Blau Index	---	3.592** (.662)	---	3.469** (.663)
Extreme Violent Index	---	---	.025 (.172)	.089 (.136)
Common Violent Index	---	---	-.148 (.108)	-.147 (.106)
P Conservative Protestant	---	---	2.700** (.958)	1.249 (.896)
<b>Controls</b>				
Logged White Population	.108** (.026)	-.059 (.100)	.174** (.069)	-.015 (.139)
P Whites Age 15-24	.534 (2.961)	2.017 (3.500)	2.362 (3.477)	3.276 (3.790)
Constant	-11.182 (.914)	-10.131** (1.791)	-12.574 (1.678)	-10.981** (2.476)
Log Likelihood	-328.086	-312.876	-324.567	-310.205
Pseudo R-Square	.005	.051	.016	.060
Model Chi-Square	3.51	33.93**	10.55	39.27**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.

**Table C6. Negative Binomial Regression Models Predicting White Argument Homicide with Confederate South Dummy Variable and Controls (N=79).**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>Independent Variables</b>				
Confederate South	.959** (.395)	.168 (.168)	.376 (.380)	-.137 (.195)
White Disadvantage Index	---	.120* (.060)	---	.114 (.077)
Blau Index	---	4.085** (.586)	---	3.966** (.777)
Extreme Violent Index	---	---	.139* (.081)	.084 (.075)
Common Violent Index	---	---	-.063 (.136)	.035 (.057)
P Conservative Protestant	---	---	2.513* (1.124)	1.266 (1.330)
<b>Controls</b>				
Logged White Population	.036 (.098)	-.099* (.053)	.092 (.064)	-.070 (.091)
P Whites Age 15-24	-4.763** (1.082)	-3.276 (2.640)	-3.311 (2.020)	-2.831 (3.151)
Constant	-8.874** (1.418)	8.375** (1.042)	-9.973** (1.030)	-8.866** (1.662)
Log Likelihood	-392.554	-367.562	-389.982	-366.030
Pseudo R-Square	.023	.085	.029	.089
Model Chi-Square	18.08**	68.06**	23.22**	71.12**

\*p<.05, \*\* p<.01 (Based on One-Tailed Tests of Significance)

Note: These models are clustered by region using STATA's cluster function and include an offset variable indicating the logged population size.

## **VITA**

Timothy Hayes received his Bachelor of Arts degree in psychology and his Master of Science degree in sociology from Mississippi State University. He will receive the degree of Doctor of Philosophy in sociology from Louisiana State University during the Summer 2006 Commencement. In August 2006, he will begin his appointment as an Assistant Professor at the University of North Carolina at Pembroke.